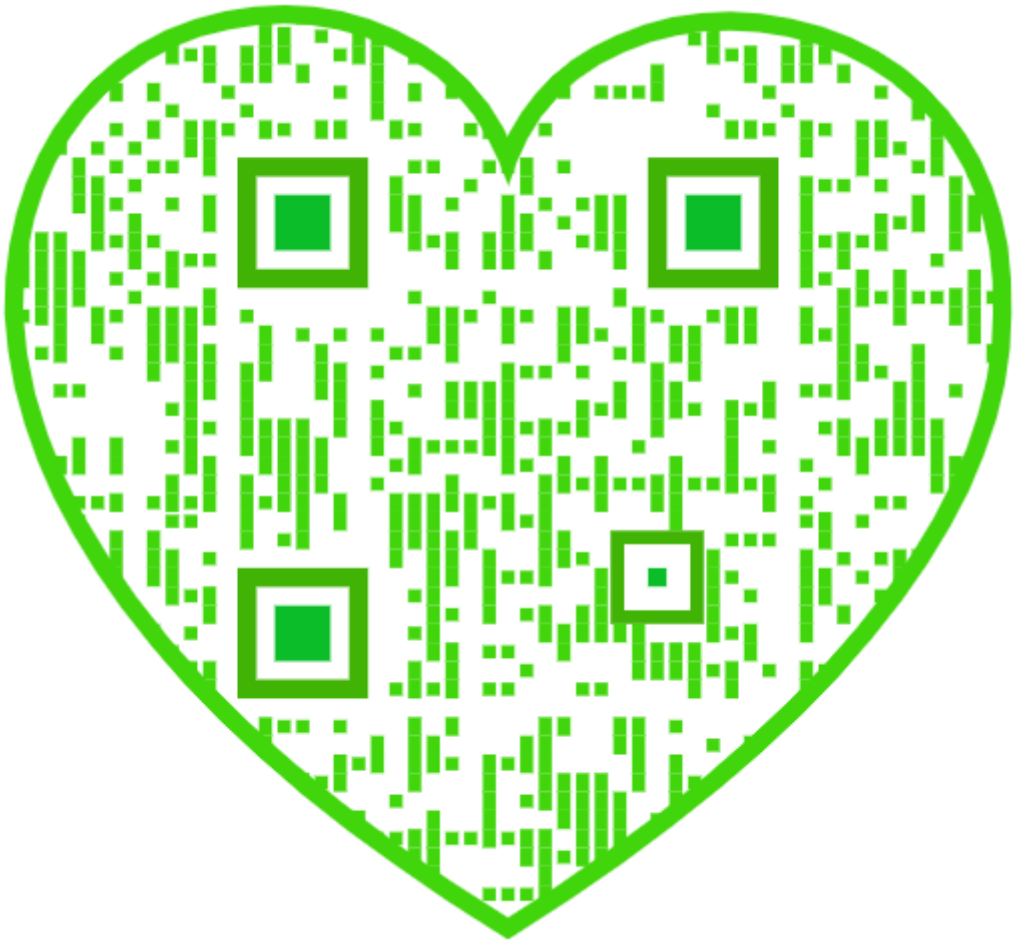

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The ARCHITECT and ENGINEER

JULY 1926

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the ARCHITECT & ENGINEER

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STREET IN SPAIN, ENTRANCE TO EL PASEO DE LA GUERRA, SANTA BARBARA, CALIFORNIA
JAMES OSBORNE CRAIG, ARCHITECT

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The
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VOL. LXXXVI JULY, 1926 No. 1

New Santa Barbara

By IRVING F. MORROW*

TO the cycle of destruction and repair there is no end. The scene changes, and the causes at work; but the activities of pulling down and covering up the consequences go ever on. As I meditated on events in Santa Barbara during the past year, and on her position today, there came to mind Carl Sandburg's poem, Grass.** There is grimmer stuff here than went into Santa Barbara's catastrophe, thank goodness; contrast as well as analogy, I suppose, played its part in recalling these lines—

Pile the bodies high at Austerlitz and Waterloo.
Shovel them under and let me work—
I am the grass; I cover all.

And pile them high at Gettysburg
And pile them high at Ypres and Verdun.
Shovel them under and let me work.
Two years, ten years, and passengers ask the conductor:
What place is this?
Where are we now?

I am the grass.
Let me work.

What particularly intrigued me was the reflection that while nature is continually striving to cover up the ravages of man, he, in his turn, is at work repairing the ravages of nature. Viewed this other way about, I can see in Santa Barbara's situation, which is the latter one, the material for another poem—although I am not the person to attempt to write it. For just one year ago the city was visited by earthquakes of unusual duration and violence, serious enough to demolish important and supposedly stable structures. Look at the pictures taken

*Member of the firm of Morrow & Morrow, Architects, San Francisco.
**Carl Sandburg; Cornhuskers. New York; Henry Holt & Co.

less than a year later, if you have not been fortunate in visiting the site in the meantime, and judge for yourself of the aggressiveness of the effort made to repair the damage. But the activity which has gone on in Santa Barbara for a year past is not of that effacing kind which will make passengers ask the conductor where they are. If there was previously but one Santa Barbara, it promises to become with the passing of time only more unique. Nature's problem in the face of man's folly is one of healing; an accident of nature has here called forth constructive energy.

It is natural for one born and raised on San Francisco Bay and who experienced the earthq—I should say the fire—there in 1906, to institute comparisons between the two situations. I am thinking not so much of the catastrophes themselves as of the communities' re-

New and Old, Santa Barbara. Red Cross Drug Store, Wm. A. Edwards, Architect. Lear Building, repair by Community Drafting Room. Paseo de las Flores, Mrs. James Osborne Craig, Architect.

actions to them. There seems to be no question that the southern city has shown itself more alert to take advantage of the opportunities opened up by its misfortune. I do not overlook either the speed or the nature and scale of San Francisco's rebuilding. For all that, what was accomplished was but the sum of uncoordinated individual activities; and therefore, although the Burnham plan for the city's development had just exposed flagrant evils in planning and suggested means of correction, reconstruction promptly confirmed all the old errors almost beyond hope of repair. I can think at the moment of no significant public improvements which came out of the catastrophe other than the salt water reservoir auxiliary fire protection system, and, at an interval of several years, the Civic Center. One may urge that destruction in San Francisco was much more complete over a far greater area than in Santa Barbara. On the other hand, the community's re-

sources were proportionately larger. The fact remains that within a few months after the event Santa Barbara was putting into effect public improvements of a kind which in San Francisco never emerged from the phase of edifying discussion.

Undoubtedly the main factor in this more ready response was not inherently superior energy, but leadership. While it is true that nobody had specifically anticipated the earthquake, Santa Barbara was none the less prepared. For several years her Community Arts Association had occupied itself with music, drama, and other artistic and cultural activities, and through its Plans and Planting Branch had achieved tangible results in instilling a public regard for the importance of the city's appearance. The program of preserving Santa Barbara's Spanish character and associations had already been clearly formulated and

Estado Street, Santa Barbara. Osborne's Book Store, H. L. Wass, Architect. Hasinger Building, Taylor & Taylor, Architects. Carillo Building, Marston, Van Pelt & Mayberry, Architects.

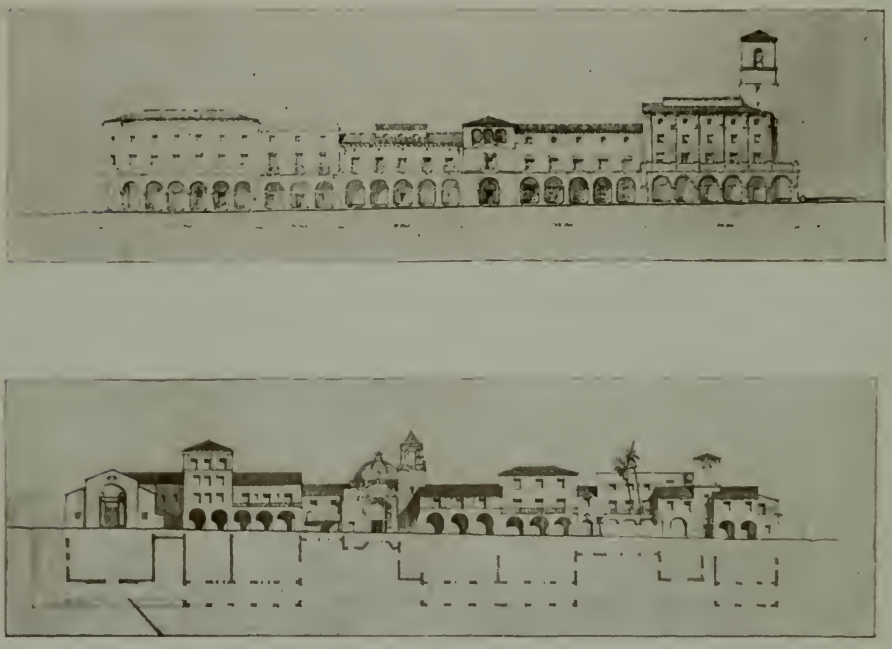
essentially accepted. Under cautious but determined leadership a campaign of education had been instituted, while the construction of such semi-public works as el Paseo de la Guerra and the de la Guerra Studios might be considered at one and the same time as propaganda and convincing demonstration. When the earthquake made sudden demands for extensive reconstruction, therefore, unintelligent building did not promptly usurp the field while academic quibbling ran futilely on. The program was ready, the spirit for its realization was alive, and the calamity could be accepted as a more prompt and extensive opportunity for putting it into effect than had been otherwise anticipated.

Shortly following the disaster the City Council instituted an Architectural Board of Review† charged with the duty of passing upon the

†Legal technicalities have since led to the repeal of the ordinance establishing the Architectural Board of Review, with a view to instituting it under a new ordinance avoiding the objections of the original one.

design of every structure for which building permits might be requested. In the case of public work the Board enjoyed obligatory jurisdiction; in private work its powers were advisory.

The most original inspiration, however, was the Community Draughting Room. Here, in effect, was a going architectural office, manned by competent designers, devoted to showing people that art is neither irrelevant nor necessarily costly, and that in the long run the solutions of their problems most satisfactory to themselves and to the public good are one and the same. Plenty of people have been willing to talk and write on the truth of these propositions, but I know of no other instance where a completely equipped office has been opened to demonstrate them. Recourse to the services of the Community Draught-



SUGGESTED BLOCK TREATMENTS, COMMUNITY DRAFTING ROOM, SANTA BARBARA, CALIFORNIA

ing Room has, of course, been optional, and generally proffered after the usual course of private initiative appears to be leading to unfortunate results. On its part, the Draughting Room, when approached, has held itself immutably bound by an owner's requirements and cost. Through this clever device numerous building of all types which might have become public eyesores have been transformed into private and public assets by the simple application of intelligence. The operation of the scheme is so suggestive that it is regrettable that a few "before and after" exhibits could not be given without risking offensive inferences and comparisons.

I touched above on the project of preserving and enhancing Santa Barbara's original character. The idea had already been elaborated, and convincingly put before the public. The ideal had been exemplified

and its practicability demonstrated in one way or another by such building as, among others, the Post Office, the County National Bank, the Paseo de la Guerra, the new Lobero Theater, the Mihran Studio building, and the new buildings on the de la Guerra Plaza, besides innumerable residences both large and small in all parts of the city and its surroundings. The catastrophe offered an unparalleled opportunity to accelerate this movement in the center of the city, and the Community Draughting Room has insofar as possible been made an instrument in the furthering of this program. The photographs of reconstructed frontages along the business streets show the nature of what has been accomplished toward preserving harmony and individual character.

DIAGRAM OF METHOD OF WIDENING ESTADO STREET, SANTA BARBARA, CALIFORNIA

The most significant and original improvement of a public nature to be put into effect is the widening of Estado street by arcading under the buildings. Briefly this scheme is as follows: Property lines remain undisturbed, and owners give the city an easement to a sidewalk right of way on the ground floor. The sidewalk is then moved back into an arcade under the building, and the curb is moved just far enough from the building line to keep hubs and overhanging parts of vehicles from striking the buildings. The sectional diagram on page 47 explains the idea. By this simple device the width of the original sidewalks is added to the street, and one has gained sidewalks which are sheltered from summer sun and winter rain by attractive arcades. Variety is preserved because no arcade type is imposed. And this is accomplished without condemnation proceedings and costly purchases of property

and moving of buildings throughout the length of the street. This scheme is now being adopted on several blocks of Estado street. Where it has been found impracticable of application at the present moment builders are asked to co-operate by arranging piers and columns so that the arcade can be put through with a minimum of alteration at a later date.

It is interesting to see Santa Barbara realizing the practical and aesthetic advantages of arcading her main street. In California's early days many towns enjoyed the picturesqueness and the shelter of covered sidewalks. These were generally in the form of wood canopies supported on wood posts at the curb line; simple to primitiveness often, but not without grace and the charm of quiet comfort. No sooner is such a town bitten by the aspiration toward metropolitan greatness

SMALL HOUSE, SANTA BARBARA
E. Keith Lockard, Architect

than its first step is to raze its one human asset, the covered sidewalks, as evidence of grim seriousness. It is all of a piece with the common American impulse to cut down anything growing (unless in a decorated pot) within the sight of business. I suppose it is a belated outgrowth from the Puritan contempt for amenity. This used to be operative mainly in the fields of religion and morals. Now that the main interests of life have shifted to what Veblen would call the pecuniary, it survives as an equally zealous conviction that business, to be effective, must be disagreeable.

I cannot leave the subject of Santa Barbara's arcading without recalling the charm of this motif as used at Bologna. Incidental arcades of greater or less extent, of course, are common throughout Europe; but in Bologna the idea has been adopted as a consistent parti; and one can stroll seemingly endlessly through the city without ever emerging

from under arcades save to cross streets. The beauty and charm of this feature of Bologna are among the most delightful of my European reminiscenes.

The simplification of street architecture in the Spanish manner and the arcading have also brought in certain other important results. It has been found that the enhancement of the building facades tends to restrain unrestricted electric sign advertising, and flood lighting is being tried with success. The advertising problem was one to which the Plans and Planting Branch of the Community Arts Association had devoted some attention, as the usual small-town aping of metropolitan license is a source of the most undignified confusion. The unique possibilities of varied bracket lighting as well as flood lighting in connection with the arcade system can readily be realized. Where streets are

HOUSE OF MR. JOHN OLIVER, SANTA BARBARA
John Oliver, Designer, with suggestions from Community Drafting Room

arcaded there is also eliminated the tattered effect that often comes from unregulated awnings of all designs, heights, and conditions.

Not the least gratifying aspect of Santa Barbara's handling of her problem is the realistic attitude toward her whole situation. It is indeed rare to find a town which realizes that it is not, and in the calculable future shows no promise of being, a metropolitan center. Santa Barbara has not fallen into the common error, at once pathetic and ridiculous, of wasting effort in straining after irrealities. A small community has set itself the goal of being, not a second- or third-rate large city, but the best possible small community. Such courage has ample rewards. You can tell you are not in Cleveland, Denver, Kansas City, Omaha, or Portland, without looking at the end of the railroad station. The curse of American cities is barren imitativeness and timid renunciation of individuality. I frequently note with dismay that, through-

out the length and breadth of the country, progress is conceived in terms of suppressing native characteristics and advantages and imposing standardized grandiosities with no roots in the soil. Every little town is pathetically afraid someone may suspect that it is not New York. That Santa Barbara should consider her development in the light of her Spanish-Californian past, still happily amply in evidence, is logical enough. Yet it required insight and clear-headed purpose to turn a deaf ear to the arrogant pretensions of Beaux-Arts grandiloquence. Santa Barbara stands unique among American cities in that it cannot so much as boast of a major axis, and remains unashamed. Even the arcading designed for Estado street fails to emulate the goose-step of the Rue de Rivoli.

It is one phase of the realistic attitude I extol that Santa Barbara

HOUSE OF MR. AND MRS. S. T. VAN DUSEN, SANTA BARBARA

has appreciated the importance of small stores, and above all, small houses. Civic centers, department stores, and tourist hotels must after all constitute much the smallest portion of any city. The greater part of business will be conducted in small stores, and by far the preponderant area must consist of small houses. If these are predominantly meretricious, a handful of impressive objectives for sight-seeing busses cannot give a town distinction. Before the earthquake the Community Arts Association, in its annual prizes and its educational activities, placed emphasis on small houses. Since the earthquake a large part of the activity of the Community Draughting Room has been devoted, through its Home Planning Service Bureau, to the collection and dissemination of data pertaining to small houses, and to the improvement of their design. This emphasis is a most significant thing. It may offer less personal satisfaction than attention paid to a few spectacular

high spots, but it is an essential condition to raising the general tone of the city above the depressing mediocrity of prevalent American urban development.

The question of the architectural way upon which Santa Barbara has set out is one of considerable importance. While most American cities have been content to drift in our traditionless flux, Santa Barbara has consciously set herself the problem of reviving the forms of her Spanish-Californian past. I believe this is a legitimate step. These traditions are beautiful in themselves; they are historically, climatically, and aesthetically appropriate; their aroma still clings perceptibly to the town; and they are being applied by some of the ablest architectural designers on the Pacific Coast. In thus choosing a deliberate and tangible starting point, and one which enjoys general appreciation and

HOUSE OF MR. R. M. CULLER, SANTA BARBARA, CALIFORNIA
Soule, Murphy & Hastings, Architects

acceptance, there is hope of avoiding much of the purposeless floundering which characterizes our present architectural efforts. Nevertheless, I should regret to see Santa Barbara sink to the position of a mere archaeological backwash. I cannot believe, however, that such a fate awaits a community which embraces her culture, intelligence, and energy. I look to Santa Barbara as a sort of laboratory experiment in California architecture. Once she has assimilated her present available architectural material and adjusted herself to a viewpoint in harmony with the real necessities of the modern situation, she should provide the inspiration and the leadership for a movement genuinely modern and genuinely Californian. If the activity for which I hope ultimately flowers, then each successive review of her artistic situation may continue to be headed by the title I have chosen for this brief notice—New Santa Barbara.

JOHNSTON CAFETERIA, SANTA BARBARA, CALIFORNIA
WILLIAM A. EDWARDS, ARCHITECT
J. J. PLUNKETT, ASSOCIATE ARCHITECT

MIHRAN STUDIO BUILDING, SANTA BARBARA, CALIFORNIA
DESIGNED AFTER SUGGESTIONS BY ROBERT W. HYDE

RED CROSS DRUG STORE, SANTA BARBARA
WILLIAM A. EDWARDS, ARCHITECT

OLD AND NEW, SANTA BARBARA. THE MORNING PRESS BUILDING
WM. A. EDWARDS, ARCHITECT, J. J. PLUNKETT, ASSOCIATE

AN ARCADED BLOCK, SANTA BARBARA, CALIFORNIA
DESIGNED BY THE COMMUNITY DRAFTING ROOM

ARCADE, STAR MOTOR COMPANY, SANTA BARBARA
DESIGNED BY THE COMMUNITY DRAFTING ROOM

BUSINESS BUILDINGS, ESTADO STREET, SANTA BARBARA
Soule, Murphy & Hastings, Architects, of new buildings. Mercan

Estado Street, Santa Barbara. State Dry Goods Store, designed by E. F. Edwards. Consolidated Title Insurance Co., A. C. Sanders, Architect. Southern California Edison Co., Carleton M. Winslow, Architect. Johnston's Cafeteria, Wm. A. Edwards, Architect. J. J. Plunkett, Associate.

BOTHIN BUILDING, SANTA BARBARA
LIONEL H. PRIES, ARCHITECT

ROGERS BUILDING, SANTA BARBARA, CALIFORNIA
SOULE, MURPHY & HASTINGS, ARCHITECTS

Estado Street, Santa Barbara. State Dry Goods Store, designed by E. F. Edwards. Consolidated Title Insurance Co., A. C. Snaders, Architect. Southern California Edison Co., Carleton M. Winslow, Architect. Johnston's Cafeteria, Wm. A. Edwards, Architect. J. J. Plunkett, Associate.

Estado Street, Santa Barbara. Santa Fe Railway, Soule, Murphy & Hastings, Architects. Rogers Building, Soule, Murphy & Hastings, Architects. Osborne's Book Store, H. L. Wuss, Architect. Hassinger Building, Taylor & Taylor, Architects. Carillo Building, Marston, Van Pelt & Mayberry, Architects.

PIERCE BLOCK, SANTA BARBARA, CALIFORNIA
THORNTON FITZHUGH, ARCHITECT

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STORES IN OUTLYING BUSINESS DISTRICT, SANTA BARBARA
WYTHE, BLAINE AND OLSON,
ARCHITECTS

GRANADA MARKET, SANTA BARBARA, CALIFORNIA
SOULE, MURPHY & HASTINGS, ARCHITECTS

HITCHCOCK MOTOR CO., SANTA BARBARA, CALIFORNIA
ALTERATIONS SUPERVISED BY COMMUNITY DRAFTING ROOM

MIHRAN STUDIO BUILDING, SANTA BARBARA, CALIFORNIA
DESIGNED AFTER SUGGESTIONS BY ROBERT W. HYDE

DE LA GUERRA STUDIOS, SANTA BARBARA
JAMES OSBORNE CRAIG. ARCHITECT

DE LA GUERRA STUDIOS, SANTA BARBARA

DE LA GUERRA STUDIOS, SANTA BARBARA
JAMES OSBORNE CRAIG, ARCHITECT

EL PASEO DE LA GUERRA, SANTA BARBARA
JAMES OSBORNE CRAIG, ARCHITECT

DE LA GUERRA STUDIOS, SANTA BARBARA
JAMES OSBORNE CRAIG, ARCHITECT

STREET CORNER, SANTA BARBARA, CALIFORNIA
SOULE, MURPHY & HASTINGS, ARCHITECTS

GARDENS, RUBIO PLAZA, SANTA BARBARA
MRS. JAMES OSBORNE CRAIG, ARCHITECT

SMALL HOUSE, SANTA BARBARA.
GEORGE PORTER, DESIGNER

SMALL HOUSE, SANTA BARBARA
GEORGE PORTER, DESIGNER

HOUSE OF MRS. FISHER, SANTA BARBARA
CARLETON M. WINSLOW, ARCHITECT

HOUSE OF DR. WILLIAMS, SANTA BARBARA
SOULE, MURPHY & HASTINGS, ARCHITECTS

HOUSE AT SANTA BARBARA, CALIFORNIA
MRS. JAMES OSBORNE CRAIG, ARCHITECT

HOUSES AT SANTA BARBARA, CALIFORNIA
MRS. JAMES OSBORNE CRAIG, ARCHITECT

HOUSES AT SANTA BARBARA, CALIFORNIA
MRS. JAMES OSBORNE CRAIG. ARCHITECT

HOUSE OF DR. JOHN WILLIS BAER, MONTECITO
E. WALLACE NEFF, ARCHITECT

WHAT BECOMES OF THE ARCHITECT'S DOLLAR

WHEN THE ARCHITECT
CHARGES AT LEAST THE MINIMUM SCHEDULE
AS ESTABLISHED BY THE AMERICAN
INSTITUTE OF ARCHITECTS

PREPARED BY THE COST COMMITTEE OF THE
ARCHITECTS' LEAGUE OF HOLLYWOOD.

The Architects' Vanishing Dollar

By CHARLES KYSON, Architect*

THE Architects' League of Hollywood has no axe to grind. It is not a business getting organization in any sense of the word. We welcome into our association any architect desiring to help his profession and himself. The name, The Architects' League of Hollywood, was chosen because it was started by architects practicing in Hollywood and also the name "Hollywood" has considerable publicity value. We welcome you, the architects of the United States, to join this organization. If you will unite with us you will help your profession and yourself. We believe in setting forth the cost of production to the architect of adequate architectural service to the building public. We believe this will be beneficial to the public as well as to the architect. The average architect loves his profession and believes deeply in the service he can render to his community. The public, on the other hand, being essentially fair minded, is always willing to pay a fair price for honest service when getting real value. As the public comes to the realization that the plans and specifications for their buildings are more the foundation of those buildings than the concrete that goes under them, this common understanding will enable the architect to charge a fair fee for his services. The building public on the other hand comes to a realization of the value of this service and will gladly pay a fair price for it.

This report is to be placed gratuitously in the hands of every architect in the State of California and will be sent to any architect in the United States desiring a copy. There is no question but what a table of costs of this sort will fortify the argument of the architect in support of a fair and just charge for his work.

The information given in the accompanying table will be priceless to you if you make use of it correctly. If you have a stubborn client who has no realization of what it costs an architect to make plans and specifications, show him the above table and tell him that these are not your figures but they are the figures of the Architects' League of Hollywood, which is composed of a group of architects who have made an exhaustive study of the cost of making plans and specifications, and these costs have been taken from a large number of high class architectural offices who really give the architectural service to their clients that they should have if their buildings are to be a success.

In Table Number 1 will be found a compilation of the data that has been furnished us to date. Column Number 2 represents the draughting room salary paid in making the drawings. This column includes no salary to the architect unless he worked upon the drawings as a draughtsman. Column Number 3 represents the overhead. In this column is included a salary to the architect for the administration of his business, and column Number 4 represents the total cost of the drawings and specifications without any profit to the architect. Column Number 5 represents the cost of the building in dollars and does not include the fee to the architect.

Please do not make the mistake of not figuring a salary to the architect in Table Number 1, Column Number 3, otherwise the figures will be without value to the Architects' League of Hollywood. If you do not figure a salary to yourself you have not arrived at the actual cost

*President of the Architects' League of Hollywood.

Preliminary Report Of The Architects' League Of Hollywood.

Cost Of Producing Plans And Specifications. Without Superintendance.

Column. 1.	Column. 2.	Column 3.	Column 4.	Column 5.
Description Of The Job.	Draughting Room Salary % Of Cost Of Building.	Overhead % Of Cost Of Building. (Including The Architect's Salary.)	Total Cost Of Plans % Of Cost Of Bldg. Columns 2+3	Cost Of Building Not Including Architect's Fee.
Commercial Hotel	61	1 23	1 84	133 277 00
Group Hotel	92	3 16	4 08	61 849 94
Sub Total	1 53	4 39	5 92	
Average of 2 Hotels	76	2 20	2 96	
Church	1 60	3 00	4 60	190 000 00
"	1 82	3 65	5 47	80 000 00
"	2 77	3 00	5 77	121 841 00
"	3 15	1 67	4 82	189 264 79
Sub Total.	9 34	11 32	20 66	
Average of 4 Churches	2 34	2 83	5 17	
Library	1 40	2 52	3 92	75 256 65
Average Of—				
10 Houses $2300-10,000	1 53	3 44	4 97	
8 " -10,000-20,000	1 33	3 44	4 77	
4 Houses-20,000-25,000	1 55	4 71	6 26	
4 " -25,000 30,000	1 71	4 70	6 41	
6 Houses 40,000-70,000	2 34	4 79	7 13	
" -70,000-100,000				
2 " -100,000-130,000	2 06	4 40	6 46	
School	1 98	2 00	3 98	$153 172 00
"	2 12	1 53	3 65	56 860 00
"	1 54	1 82	3 36	72 470 00
"	1 60	2 52	4 12	69 724 00
"	1 08	1 67	2 75	75 256 65
"	2 02	1 09	3 11	460 065 28
"	1 14	1 39	3 13	64 505 90
Sub Total	12 08	12 02	24 10	
Average Of 7 Schools	1 73	1 72	3 45	
Club	1 25	3 07	4 32	28 219 14
"	1 40	3 13	4 53	52 037 89
"	2 85	1 27	4 12	794 338 64
Sub Total	5 50	7 47	12 97	
Average of 3 Clubs.	1 83	2 49	4 32	

"The Plans & Specifications Are More The Foundation Of A Building Than The Concrete That Goes Under It."

TABLE No. 1

of your drawings. Should you desire to send in any cost data to the Architects' League of Hollywood or offer any suggestions, you can do so and your figures will be used in the averages to be made up and published in the report to be published later. In doing this it would be helpful to us if you would use the form used in this table. In order to save time and trouble in figuring percentages all it will be necessary for you to do is to give us the draughting room salary in dollars, the overhead in dollars and the cost of building, omitting architect's fee. The Architects' League will figure the percentages and include into the averages for the more completed table that is to be included in the report of The Architects' League of Hollywood, showing the production cost of the plans and specifications to the architect.

It is very difficult to arrive at a rule to determine the amount of overhead to be added to the draughting room salary on any specific job. The firm of cost accountants, employed by The Architects' League of Hollywood, offered the following solution, which may be described as the one to two rule, that is to take twice the amount of draughting room salary and add it to the draughting room salary, thus giving the production cost of the drawings. This would mean that if the draughting room salary on a job was $1000, then the overhead would be $2000, making a total of $3000 the cost of producing the drawings. The theory being that if the architect had a double entry bookkeeping system then the bookkeeper would make a profit and loss statement every month and in this way the overhead would be properly distributed. If there was not enough business in the office to take care of the overhead, the business would show a loss. If, on the other hand, the office was very busy, then the profit and loss statement would show a profit on the distribution of overhead. If the architects use this method, they would always have a matter of comparison as to the actual costs of their drawings, and the overhead would not fluctuate with the volume of business they had in the office. As a matter of fact it appears that the one to two rule is a very safe one to work to, particularly if the above method is used giving a profit and loss statement at periodic intervals. It certainly is a very quick way of determining where one's costs stand at various times during the preparation of the plans for any specific job. One simply has to multiply the draughting room salary by 3 and that will give the production cost at that particular time. The proof of this is indicated in the following table No. II. This was an average of 21 months' business taken from an actual business that was considered typical. In this particular architect's office the business was fairly typical, being fine residences, churches, some commercial buildings, and was an average of busy times and slack times.

TABLE NO. II

	Item	Per Cent
1.	Draughting room salary	29.62
2.	Office expense composed of items set forth in table II except that architect's time was omitted	25.68
3.	Office expense plus draughting room salary, or Item (1) plus (2)	55.3
4.	Architect's salary	34.42
5.	Total expense or total production cost	89.72
6.	Profit	10.28
7.	Gross collections	100.00

From this table you can see that the draughting room salary amounts to 29.62% of the gross collections. Multiply this by 3 and you have 88.86%. This would equal the expense of conducting the business, leaving a net profit of 11.14%. As a matter of fact the actual profit in this particular case was 10.28%, so you can see that the one to two rule is a fairly accurate one and could be safely used under ordinary conditions.

The table will be part of the report of the Architects' League of Hollywood. It is not as complete as desired and the association will appreciate information from The Architect and Engineer readers relative to production costs, showing actual expenditures for drawings, details and specifications on specific jobs. Data is wanted for theatres, churches, warehouses, apartments, hotels and various public buildings, also data as to the cost of making the drawings and specifications for commercial buildings and houses.

* * * *

To Prevent Architects' Changes

A building planning service inaugurated by the National Association of Building Owners and Managers, will be a factor in the final acceptance of architects' plans and specifications, if the first meeting of the planning committee is an indication of its future activities.

On December 18 members of this committee of expert managers gathered in New York from various sections of the country and passed judgment on the plans for an $11,000,000 30-story office structure which is to be built for Walter J. Salmon and associates in New York City. While the committee considered such matters as elevator service, partitions, power and heating appliances, as well as the particular features of the structural plans that affect the income of an office building, their deliberations were of particular interest to contractors because of the possible effect on furthering the completeness of detailed plans before construction work is started.

While it may be difficult to codify such information for the use of architects and engineers, yet the service rendered by this committee may be extensive enough to have a salutary effect by correcting many errors that otherwise might result in the exasperating architects' changes that have always been a cause of loss to contractors.

Owners are often unable to visualize the practical details of a building from the plans, yet discover the shortcomings of an arrangement after the work is under way. The consequence is usually a stop order while the plans are being changed. Thus the contractor is faced with a rearrangement of his schedule, a turnover of labor, a wastage of time and money spent in making shop drawings and forms, not to mention the strain that is put on superintendents who must reorganize the work, familiarize themselves with the changes and try to proceed with erection as best they may.

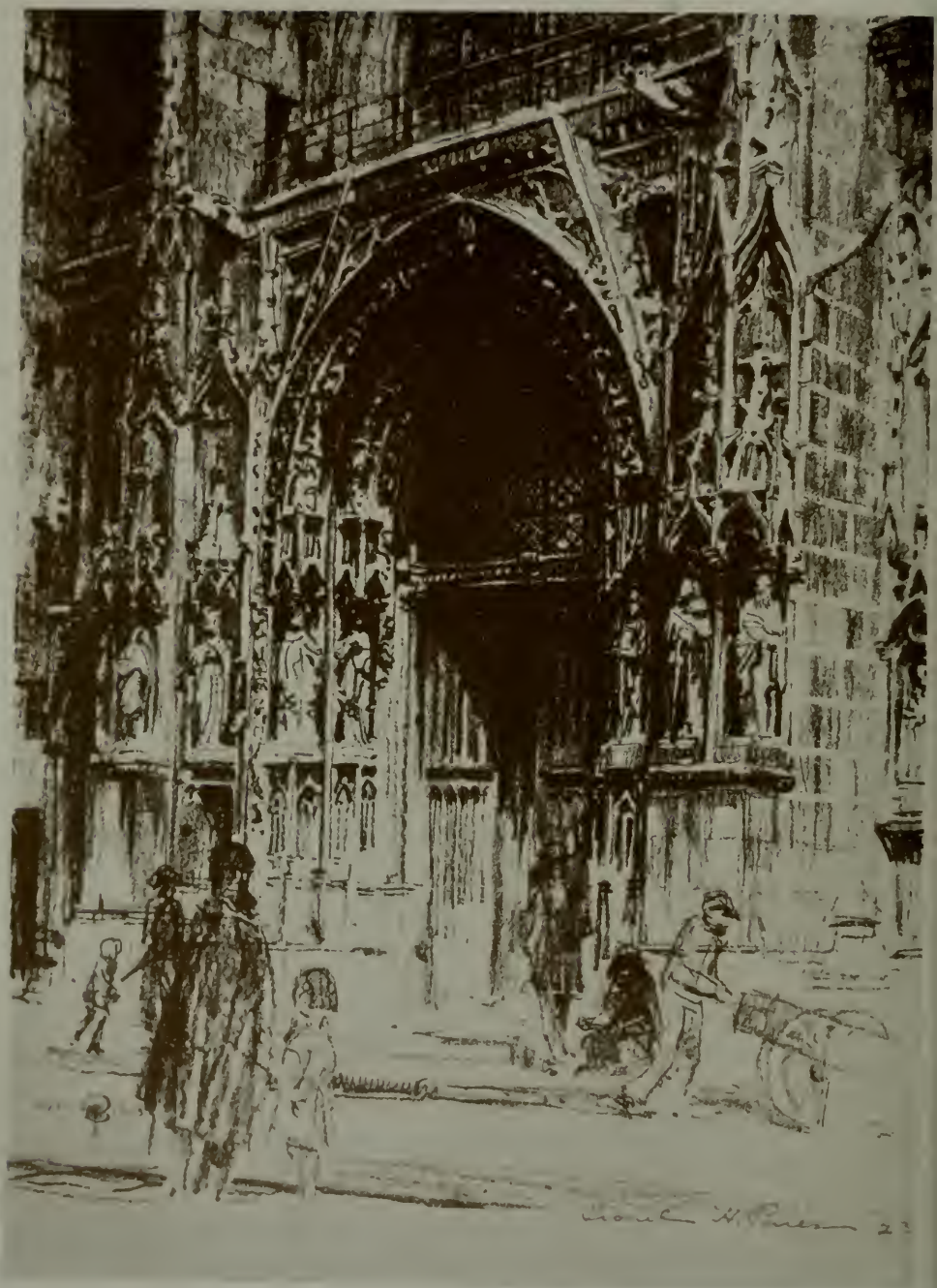
On one big office building recently completed, no fewer than 83 such changes were ordered, many of them being of major significance. The wastes involved reached a staggering sum although probably insignificant compared to the losses in rental income which were prevented.—The American Contractor.

PORTFOLIO *of* SKETCHES *in* FRANCE, ITALY *and* SPAIN *by* LIONEL H. PRIES

PUENTE SAN MARTIN, TOLEDO

THE VERMILLION BRIDGE, RONDA

LA TOUR DE BEURRE, ROUEN, FRANCE



SAINTE MERRI, PARIS

SAN ANDREA DE LA FRATE, ROME

RONDA, SEEN FROM HOUSE OF MARQUIS DE SALVIATIERA

ALONG THE ARNO, FLORENCE

GARDEN OF LINDAKAXA, ALHAMBRA, GRANADA

GARDEN OF CARMEN DE MATAMOROS, GRANADA

KLAMATH RIVER BRIDGE, DEL NORTE COUNTY, CALIFORNIA
HARLAN D. MILLER, STATE HIGHWAY ENGINEER

The Klamath River Concrete Arch Bridge

By FRANK B. DURKE

THE Klamath river bridge, recently opened to traffic, is the largest structure of its kind on the state highway system of California, and probably the largest reinforced concrete arch bridge in the world built with piers resting on timber pile foundations. It is nearly 1200 feet long, its central features being five massive arches, each 210 feet in length. It has a clear roadway width of 21 feet, the roadway being 51 feet above the water of the river. The great concrete piers extend 30 feet below the low water mark, where they are founded on 946 piles driven many feet into the bed of the stream.

Construction, which was under way for two years, was watched by engineers throughout the United States because of the contention of some that bridging the lower Klamath with concrete arches was an impossibility. The structure is a monument to the skill of the engineers of the California highway commission. It is also a notable federal aid project.

The bridge is on the Redwood highway, one of the north and south trunk routes authorized by the first bond issue of 1909 and an important interstate connection with Oregon. Extensive improvements on the highway from Crescent City northeastward to the Oregon line also are recent accomplishments of the commission, working in co-operation with the bureau of public roads.

A special act of the 1923 legislature, originally introduced by Assemblyman Douglas, and signed by Governor Richardson, appropriated $225,000 toward the cost of the Klamath bridge. Following the death of Dr. Douglas, the legislature directed that the bridge be known as the "G. H. Douglas bridge" and bronze plaques, setting forth the memorial features, have been placed upon four massive pylons at the bridge approaches. The pylons are surmounted by figures of grizzly bears, typical of the wild and rugged country in which the bridge is located. The total cost of the structure was approximately $400,000.

The new bridge will be notable in several respects. Its piers have been built upon a wooden pile foundation. There are few arch bridges in existence as heavy and massive as the Klamath river bridge which are carried upon pile foundations. The construction of the footings proved difficult and was a source of considerable trouble for the contractor. The footings are founded 35 feet below the water level in a swiftly flowing stream which carries heavier drift than any other river in this country. This made construction slow and difficult. The contract was awarded on June 19, 1924. The bridge was practically complete at the time of the dedication. Grading of the bridge approach on the south, however, will not be finished for several months.

Plans for the bridge were prepared by the bridge department of the California Highway Commission, Harlan D. Miller, bridge engineer. F. Rolandi of San Francisco, was the contractor.

The highway commissioners who authorized this great structure are Harvey M. Toy, San Francisco, chairman; Louis Everding, Arcata,

KLAMATH RIVER BRIDGE, DEL NORTE COUNTY, CALIFORNIA
Harlan D. Miller, State Highway Engineer

PYLONS SURMOUNTED BY GRIZZLY BEARS, KLAMATH RIVER BRIDGE

and N. T. Edwards, Orange. R. M. Morton, State Highway Engineer, has had general supervision of the project.

The Governors of Oregon and California and the highway commissions of the two states, together with officials and citizens of the counties along the Redwood Highway from San Francisco to Grants Pass, Oregon, were present at the dedication.

* * * *

Garage Ventilation An Important Factor to the Architect and Builder

WITH an actual registration of approximately 20,000,000 automobiles in 1925 and a contemplated 1926 production of 3,000,000 more, the local contractor and builder cannot afford to neglect a survey of both public and private garage construction in his territory as a basis for future business.

Reliable statistics estimate that more than 35 per cent of the automobiles in the United States are daily kept in public garages. This fact gives definite importance to the public garage and its effect on the building trades.

The present concentrated drive by government officials, health authorities and physicians against the carbon monoxide peril in motor car garages offers an important item for the consideration of all contractors and builders.

Agitation against this insidious poison gas apparently reached its height this year. In every state and large community health officials, government officers and powerful associations are taking up the fight against carbon monoxide to prevent its tremendous loss of life.

Just how does this affect the building trades?

To understand the deadly work of carbon monoxide provides the clew. Created by the operation of internal combusition engines, of which the automobile engine is a type, carbon monoxide gas is released through the exhaust pipe. It gets in its deadliest work chiefly in the garage where it is usually confined because of a lack of proper ventilation precautions. But from one and one-half to three minutes is all that is necessary to cause death when exposed to this gas, in the opinion of medical authorities, and insurance investigators agree that it is one of the most deadly of gasses, particularly because it attacks without warning and gives the individual but small opportunity to escape from its ravages.

More than eight million of these 23,000,000 automobiles of 1926 will be kept in public garages, and it is that carbon monoxide is most dangerous. Obviously, in constructing a modern weather and storm proof building, contractors and builders have perhaps not prepared for the release of this poisonous gas flow in the garage.

Herein lies the opportunity for every architect and builder to assist in eliminating a great national health hazard whose enormous death toll increase each year directly in proportion to the increases in the use of motor vehicles.

Every garage, large or small, should have adequate provisions for the removal of carbon monoxide gas fumes through the installation of a proper and approved ventilating system. It is in this respect that the contractor and builder should make a mental note in his survey for future business. Countless new garages are built each day, and great is the opportunity in this field for increased business. The inclusion

of an adequate ventilation system should be made in the cost estimate to the owner, and this important item should be stressed further by calling the attention of the owner to the local regulations governing such installations.

There are but few communities in which the terrific toll of carbon monoxide gas is unknown, and every day's news tells further of this fatal gas. No garage builder can fail to be impressed with the danger of a running engine in a closed garage, because of the unhealthy effect on his workmen. While many states and cities have passed laws and ordinances governing the ventilation of garages, the contractor and builder is allotted the opportunity of creating further standards in health work. To the contractor who will take the time and trouble to drive home the point of proper ventilation is due great credit in assisting to improve the health conditions of his community.

* * * *

Wage Scales Here and Abroad

Investigation of wage scales in European countries shows that the American building mechanic is the highest paid of any similar group of workmen in the world. There is practically no comparison between the wage scales paid in American cities and those paid to building craftsmen in London, Amsterdam, Berlin and other foreign cities.

The following tabulation of the approximate average weekly wages paid building mechanics in several European cities as compared with those paid in New York, shows the advantageous position of the American building craftsmen:

	Bricklayers	Carpenters	Unskilled Labor
New York	$72	$63	40 to $45
Berlin	13	13	10
London	20	20	15
Amsterdam	15	15	12
Brussels	8	8	6
Copenhagen	20	20	15
Rome	7	7	5

The latest reports from the Department of Labor and from the international and national trade unions show from 750,000 to 800,000 skilled mechanics and helpers in the United States. Taking the latter figures and calculating the average workman's wage at $10 per day, we would have a daily bill for construction of $8,000,000.

* * * *

Criticise American Architecture

No invasion of foreign art has ever provoked a volume of conflicting criticism equal to that aroused by the exhibition of American architecture at the academy of arts at Berlin, Germany, under the direction of Max Liebermann.

Assailed by some as "art soulless" the American skyscraper is accepted by others as an aesthetic development born of economic necessity. The adverse criticism is inspired by the traditional German aversion to tall buildings which obstruct full view of the sky.

While some of the critics praised the exhibitions as exhilerating and typifying American energy, others compared the "skyscraper competition" to competitions between theatrical producers which might cause one revue to advertise 500 pretty chorus girls and its competitor 1,000.

Pouring Concrete for Forty-Four Continuous Hours

By WILLIAM E. GAFFNEY

IN the annals of construction a stupendous task has been accomplished in building operations in San Francisco that will undoubtedly interest men who, more or less, are accustomed to unusual feats of engineering. Big deeds are always meritorious. To keep a concrete mixer turning continuously for forty-four hours is an immense undertaking, yet this is what actually happened last May when over fifteen hundred yards of concrete were placed in the foundations of the new Hunter-Dulin building, situated at Montgomery and Sutter streets, San Francisco.

To the casual observer, it is rather hard to visualize what necessitated such a lengthy period of work. Probably they ask why not do it by the usual day's labor as what was to be gained by working continuously? To one trained in this field these questions answer themselves. However, technical men do ask how, and under what difficulties, this work was done.

HUNTER-DULIN BUILDING
SAN FRANCISCO

In concrete engineering, construction joints are the junctions where one pour is terminated and another is started at a later date. These joints are expensive, and do not help any towards completion except to form a boundary for fresh concrete to lay against, and they involve a delay in their making. As time and economy are principal factors in buildings of this type, the elimination of construction joints is very desirable and the continuous pouring of concrete is the solution. Now, in the foundations of the Hunter-Dulin building, there are over five thousand yards of concrete and it is an absolute certainty that this amount could not be poured in one day as ordinarily done. The pouring, however, was divided into five parts. The last one was, by far, the largest—amounting to fifteen hundred cubic yards and lasting for forty-four continuous hours. Fig. 1 gives some idea of the size of the footings. It shows one of the ribs (the foundations being of the inverted floor slab type). This rib measures 5′-0″ across and 8′-0″ from top to bottom of the inverted slab.

Before this work could be achieved, the builders, Lindgren & Swinerton, Inc., had to overcome the ample obstacles that hindered them. In this downtown district, traffic is always thick and pedestrians seem to come from everywhere and gaze at the work from the street line. Neither the traffic on wheels, nor the traffic on foot, help the builders, and they must content themselves to make the best of it. Again storage space for material was limited, consequently, the aggregate and cement must be delivered as needed. In other words, a constant flow of material was desired. Another hindrance was caused by

FIG. I—FOOTINGS, NORTH SIDE HUNTER-DULIN BUILDING, SAN FRANCISCO

FIG II—STREET WALLS SHORED WITH HEAVY TIMBERS

FIG. III—BOOM AND ELECTRIC WINCH

FIG. IV—BOOM AND BUCKET IN OPERATION

the mass of bulkheading needed to shore the street walls. The extreme depth of this building is 33 feet below the sidewalk and as the excavation got deeper, the street walls were bulkheaded and shored with heavy timbers, some of which are depicted in Fig. II. All the shores were braced against the center footing. The photograph also shows how the shoring was like a thick forest of lumber and in itself presented a bulwark against the concreting of the footings which laid directly underneath. This shoring also prevented the establishing of suitable runways to transport freshly mixed concrete. However, a unique method was used in distributing the concrete.

As before mentioned, space for storage of cement and aggregate was limited. To provide an adequate supply of material a dependable fleet of trucks was provided and they must be given credit in a great measure for the success of the pour. Another item that greatly expedited matters, was the delivery of cement in paper sacks. When needed the sacks were slashed open and emptied quickly. These two items are most noteworthy in that record breaking feat.

The method used in distributing the concrete was the boom and bucket system. The mixer was placed on Lick alley, and as the concrete was mixed it fell in a waiting hopper. A boom and derrick was centrally located in the middle of the lot on the property line side. This boom and derrick was operated by an electric winch placed on the Montgomery street side. Fig. III shows a view of the boom and the electric winch. All mechanical equipment was most desirably placed and resulted in very great efficiency. The concrete was taken from the waiting hopper and dumped into the bucket on the boom. The derrick then swung around and carried the bucket to the place desired. Fig. IV shows the boom and bucket in operation. Note how the bucket must be nestled between the timbers before the drop lever is pulled.

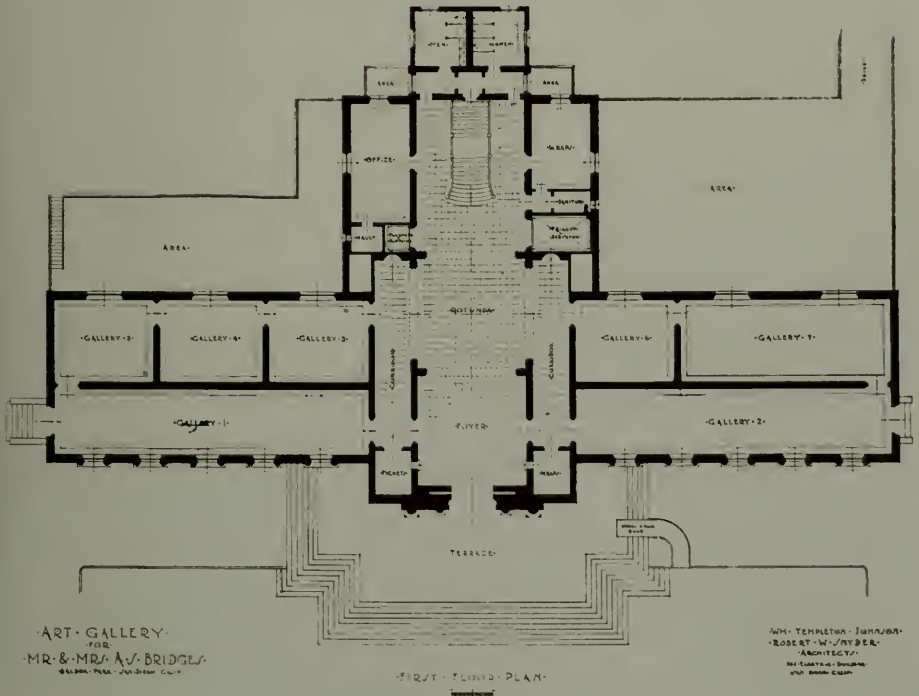
It is worth while here to mention how the job was handled as far as human element was concerned. The concrete foreman, mixer man, engineer and swing-line man worked twelve hours — all others eight. Twelve hours is a long grind but one is surprised how maximum efficient the above four were in their respective tasks and that accounts for their long hours. At the bunkers, cars were used to convey the aggregate to the mixer. One man measured rock only and another took care of the sand. That completed the main operating crew of the builders.

Forty-four hours without a moment's delay. Think of it. It was the result obtained by a careful organization in the field and the utmost co-operation of the material subcontractors, who responded to the wishes of the builders, to pour concrete until the foundation of the building was pronounced finished. * * * *

Passing of Sacramento Architect and Engineer

Architect F. A. Sanford Foale of Sacramento died July 7th in that city following a nervous breakdown two weeks prior. Mr. Foale had practiced architecture and engineering for nearly a quarter of a century, going to Sacramento from San Francisco, in which latter city he had lived after leaving his native home in Philadelphia. Buildings designed by him include several Union High schools, the Sacramento Turn Verein and the North Sacramento Masonic Hall. He did the structural engineering on the Sacramento County Court House, the Forum building, the Phelan building in San Francisco and the San Jose State Normal school. Mr. Foale was a member of the Sacramento Rotary Club, the Shrine and was one of the organizers of the De Molay Lodge. He was fifty years old.

ART GALLERY FOR A. S. DRIDGES, ESQ., SAN DIEGO
William Templeton Johnson and Robert W. Snyder, Architects



Causes of Leakage in Stucco Dwellings

By HOWARD P. HESS
with Walker & Eisen, Architects and Engineers, Los Angeles

THERE are many features to be taken into consideration in the construction of stucco dwellings which are vital factors in obtaining permanently watertight construction. Very often several of these factors are overlooked or are carelessly neglected by contractors and builders. It will be the purpose of this article to point out various causes of water penetration and to suggest methods of overcoming the most common conditions which result in water percolation into the interior of the building. The accompanying drawings illustrate the points brought out in this article and suggest improved methods of construction.

One of the most common defects which results in water penetration is the improper plastering of the fire wall on flat roof dwellings. Plate No. 1 illustrates the faulty and correct methods of applying cement plaster over the top of the fire wall. When the exterior reinforcing is merely carried to the top of the fire wall, as is shown in the diagram under "Faulty Construction," and the cement plaster is skimmed on

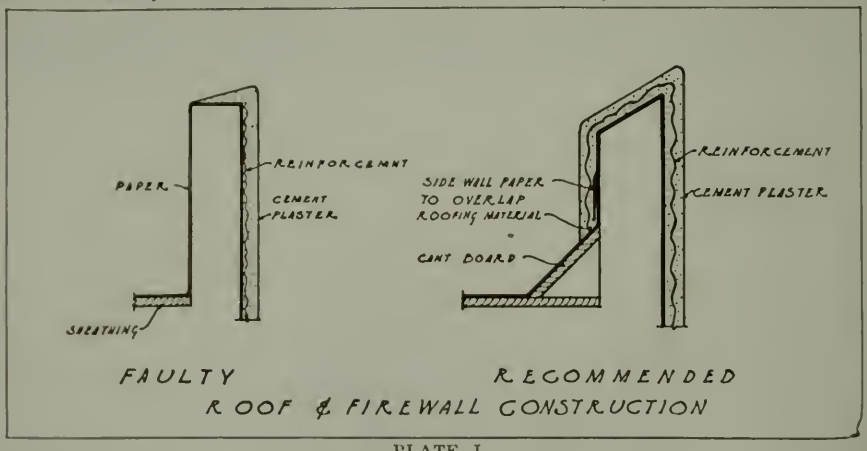


PLATE I

over half or three-quarters of the top of the fire wall, leakage invariably occurs. This faulty construction is usually due to a careless and a slipshod manner of doing the work, or as a result of a false idea of economy. Unreinforced stucco slapped over the top of the fire wall very often breaks off and rain water hitting the top of the fire wall finds its way down the outside of the building between the plaster and the base of the stucco. This water eventually appears on the inside of the house at the ceiling line on the inside of the structure.

The correct method of plastering over the fire wall is also illustrated in Plate I. This drawing shows that the studding should be beveled off toward the roof and the backing and reinforcing extended over the top of the fire wall and down on the inside overlapping roofing material as illustrated. The plaster should then be continued completely over the top of the fire wall and down on the inside overlapping the roofing material brought up on inside of fire wall.

The next most important consideration for preventing leakage into the interior of the building is the construction around openings such as windows and doors. All openings should be flashed with special flashings designed for the purpose of preventing water penetration. Dis-

Illustrations courtesy Riverside Portland Cement Company.

colored interior walls are very often seen around the windows, portraying the fact that proper attention was not paid to adequate flashing. These flashings are metal devices which prevent moisture from seeping into cracks between exterior plaster and wood frames around doors and windows. Leaks of this kind cannot be overcome by the use of a waterproof cement plaster because the percolation finds its entrance through cracks which are due to the shrinkage of wood away from the exterior plastering. Plates II, III, and IV demonstrate the recommended use of these metallic flashings.

Another common fault in stucco construction which permits leakage is improper plastering around wooden window sills where the exterior stucco forms a return to the wooden sill. Plate No. II illustrates faulty and correct sill construction. It may be easily seen that water falling on the improperly designed sill finds its way through the crack between the stucco and wood sill and eventually into the interior of the building. As a means of preventing this condition more careful contractors, in addition to applying proper flashings, have extended the stucco underneath the wooden sill so that water dropping off the wooden sill will flow directly to the exterior of the building. Faulty sill construction

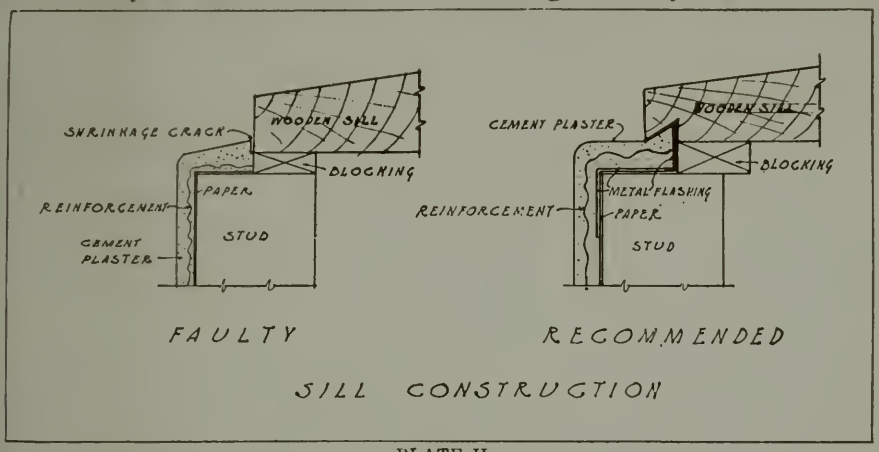


PLATE II

invariably causes leakage into the interior of the structure, which cannot be corrected by the use of a waterproof exterior plaster.

In conclusion it should be emphasized that, although there are waterproof cements on our local market which have distinctive water resisting qualities, it should not be assumed that a grossly insufficient thickness as is sometimes applied, can be relied upon for permanently satisfactory work. Such skimping of the job is very often aggravated by those who believe that the use of patented bases permits a single plaster coat of insufficient thickness. Such saving in plaster is sometimes grossly over-estimated with the result that unscrupulous plastering contractors so skimp their work that warpage and buckling of the plaster board base invariably occur. Warpage and buckling always crack the skimped plaster coat, allowing further percolation which soon finds its way into the interior of the structure. This type of construction is often practiced because of an assumed initial saving. However, the final cost to the owner of this kind of construction will greatly exceed the cost of the proper initial work, due to the fact that the job will soon have to be replastered—both on the exterior and the interior. Prospective home owners should take special precaution to see that the

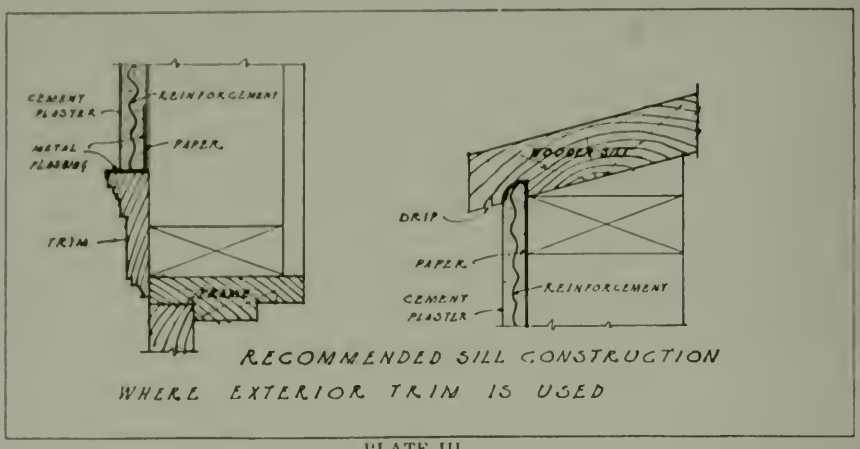


PLATE III

exterior plaster on their dwelling is at least three-quarters of an inch thick, without taking into consideration any type of base upon which the cement may be plastered. Contractors performing this type of construction do not realize the harm they are bringing to themselves. Such skimped construction is bound to reflect on stucco construction in general, and eventually, if such structures continue to be erected and unsatisfactory results realized, the unpopularity of stucco construction thus gained will cause an abstinence from exterior plastering, which, it is agreed, is one of the primary occupations of plastering contractors doing work in California. Builders performing this type of construction will suffer unrealized financial losses both in the matter of repairs to unsatisfactory plastering and in gaining poor reputations as builders of substantial structures.

There are several precautions which may be taken to secure adequate thickness on the exterior of the stucco dwellings, the most satisfactory of which is the use of an approved type of furring nail designed to hold the reinforcing at least three-eighths of an inch from the base or studding. This reinforcing should be thoroughly covered by the first coat and after a second cement plaster coat of the proper thickness is applied the job may be said to be of sufficient thickness for satisfactory results. The use of furring staples of this kind, therefore, cannot be too highly recommended.

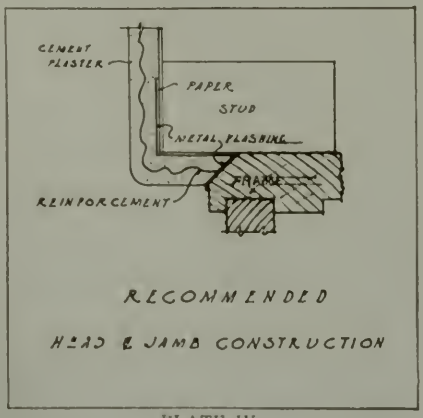


PLATE IV

The fact that a stucco dwelling can be constructed so as to be permanently waterproof in every detail should be advertised in every possible manner by those interested in building construction in California. The writer has inspected many stucco dwellings which have been plastered with ready-prepared waterproofed cement and on which correct fire wall, flashing and sill construction has been used. These buildings have proved entirely satisfactory to all concerned and no percolation or discoloration has occurred on the interior plaster at any time of the year. It is the author's opinion that should the above recommended types of construction be followed and ready-prepared waterproofed cements used in accordance with the recommendations of the manufacturers, little or no trouble from water percolation will be encountered.

* * * *

Steel Frames for Small Houses

The use of structural steel in small home construction is not an idle dream, asserts Henry R. Brigham, of Boston, chairman of the Housing Committee, National Association of Real Estate Boards. Mr. Brigham points to one builder who, he says, is profitably building small homes to sell, using steel frames and metal lath and finishing the exterior with stucco or brick. In itemizing the cost of a stucco, exterior steel frame bungalow, size 24 by 34, with five rooms and bath, the builder said:

"The cost for the metal, lumber and metal lath for the building complete is $522.72 which will figure about $75 less than the wood joists, rafters, studs and lath for exterior and interior walls. The reason for this is that the steel in the frame is spaced on two-foot centers, whereas the studs in the wood house are spaced on 16-inch centers, thus creating a saving in steel. The erection cost runs less as laborers are hired at a cost of 60 cents an hour instead of carpenters at $1 an hour. The lath is installed by men at 70 cents per hour against $1.35 per hour for wood lath." He uses 4-inch steel channels for all his frame work and 6-inch floor joists and they are delivered to the building site cut to length. He punches the necessary holes, claiming that he can do so cheaper than he can get them cut by the manufacturer. He says: "When it becomes known by the steel concerns of this country that the steel frame fireproof house can be built at no greater cost than wood they will also find that producing steel for house construction will greatly increase their tonnage."

MONTEREY PENINSULA COUNTRY CLUB
Clarence A. Tantau, Architect

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IN A RECENT address to students, made by the president of the Royal Institute of British Architects, in commenting upon some of the modern architectural evils, Mr. Guy Dawber said: "The function of criticism is not being effectually exercised, and in the realm of architecture, charlatans flourish with none to expose their charlatanry." Mr. Dawber called attention to the fact that there is open frank criticism of literature, of art and even the clergy express their dissent or disapproval of their reverend brothers; closing with the thought that perhaps if we had more and better tempered criticism by architects, publicly expressed, we would be spared some of the architectural evils of the day, and the cause of good architecture would be benefited.

WANTED—YOUR IDEAS FOR NOTHING

A Los Angeles architect has sent us the following letter which was mailed to him ostensibly to secure his participation in an "open competition" for church plans and specifications. The architect accompanied the letter with his personal interrogation: "What do you think of it?" Before expressing an opinion let us read the letter:

Gentlemen:

At a recent meeting of the Plans and Construction Committee of the First M. E. Church of— the writer was instructed to advise all architects who have expressed a desire to assist in the construction of a new auditorium for said church, and who are willing to make preliminary plans and exterior elevations without any obligation or cost to said church, to forward the same to me on or before June 19th, 1926.

Auditorium building to be of reinforced construction and large enough to seat 500 persons with basement under entire building. Same to have necessary adjoining rooms, such as pastors' study, choir room, rest room for women, and toilets for men and women. Basement to contain kitchen, room for gas furnace, janitor's closet for supplies, and banquet room.

Location: Southeast corner, having a west frontage and a north frontage. On the east side of said location stands the old frame church building, which is to remain on its present foundation for church school purposes.

It is desired that a balcony shall be shown in the plans, having a seating capacity for approximately 100 or 150 persons which shall be a portion of seating capacity above stated, balcony to be enclosed with sliding doors.

Cost of entire structure complete in every detail, not to exceed the sum of $35,000. Please state approximate cost of the building such as may be shown in your preliminary plans and exterior elevations.

A good proposition to leave alone. No competition can be satisfactory that is without a program or architectural adviser. The average layman or worse still, church committee, is far from capable of judging a good plan. Furthermore the competitor has no assurance of any compensation whatsoever for his efforts. The notice doesn't even hint that he will receive a six per cent com-

mission if his plans are accepted. What is to stop the church committee from handing all the designs over to a favored draftsman or contractor with instructions to "combine the best ideas in each and build us a church."

WATCH THE COST SHEET

Elsewhere in this issue Mr. Charles H. Kyson, working with the Architects' League of Hollywood, writes about the architect's overhead and how essential it is to watch the cost column and keep an accurate account of office expenses. This is the second article on this subject contributed by Mr. Kyson. It is worth reading and after you have digested the facts write Mr. Kyson your own experience. Your data will unquestionably prove valuable to the League in its commendable efforts to provide the profession with reliable cost information. Uncle Sam's Trade Commission says that only one business man in ten knows his cost of doing business, and in talking to a number of architects, Mr. Kyson says he has come to the conclusion that not one in twenty knows his cost. The result is that the business is disorganized and practically none of the architects are making any money. This is a condition the Architects' League of Hollywood is trying to correct. The architect must be persuaded to analyze his business. If he will do this the battle is won because he will find appalling losses due primarily to the lack of adequate cost information.

COLOR & FURNITURE IN BATHROOMS

Some time ago a correspondent wrote to the Advertising Department of a nationally known plumbing house, criticising certain features of a sumptuously appointed bathroom, the picture of which had appeared in leading magazines throughout the United States and Canada. The chief object of criticism in this display of colorful harmonies was a small upholstered chair set between the lavatory and the dressing table. The critic would have the chair removed because "it is so clearly an inappropriate piece of furniture for a bathroom."

Taking exception to the criticism and in support of furnishing the bathroom comfortably, the Crane house organ goes on to say:

"Why inappropriate? Can one give any good reason why our bathrooms should not be comfortable as well as attractive? Why beauty of color should not be companion to cleanliness? Why an easy chair should not be preferable to a hard stool or the still harder edge of the tub? From the viewpoint of beauty and harmony, it is not the presence of a chair or bench or any other bit of furniture in the bathroom that offers a point for criticism; it is how the extra piece blends or does not blend with the general lines and how its colors harmonize or clash with the color-scheme of the room itself. If there is room for a comfortable, upholstered chair in the bathroom, if it adds to the comfort and convenience of the user, by all means have it there.

"The bathroom is becoming more and more a most desirable outlet for individual expression. The daily bath is an essential of health and comfort, but it does not follow that it should be indulged amid Spartan surroundings. Doubtless most persons would prefer to take the morning shower or cold dip in a room warmly reflecting from floor to ceiling the glow of sunshine and the hues of the rainbow than the still widely prevalent arctic environment of unbroken, cold white. And with the advent of color in the bathroom inevitably come still other attractions and comforts, not the least of which is a comfortable, flesh-soothing chair. In fact, as we view it, we could not

think of adding anything to such a bathroom save another comfortable chair, or at least a well-upholstered foot-rest.

"Color in the bathroom and furniture in the bathroom are simply matters of individual taste, and we are far from being prepared to say that one's taste in color and equipment is to be brought in question because one has room for an easy chair and has the great good sense to make use of it."

AN INSPIRATION TO HIM

The publishers are in receipt of many complimentary letters from time to time and the nice things said of this magazine are indeed helpful in our plans to improve the the book with each succeeding number. Many requests have been made recently to enlarge the magazine to the standard A. I. A. size. This forward step is now being very seriously considered. But to return to the letters. Here is one of which we are particularly proud:

East Torrey Road, La Jolla, Cal.,
June 24, 1926

The Architect and Engineer,
Foxcroft Building,
San Francisco, Cal.
Dear Sirs:

In my work at the office of E. V. Ullrich, architect, here in La Jolla, I have been brought in touch with nearly all of the architectural publications, and find that perhaps I derive more inspiration from The Architect and Engineer than from any of the others.

I have very high aspirations, for some day I expect to have an office of my own here in California, and through your publication, I hope to further my aim in achieving the highest degree of excellency in architectural design.

Enclosed you will find a check for a year's subscription to your publication.

Very truly yours,
Robert D. Blake.

Regional and City Planning

Stephen Child, landscape architect and consultant in City Planning, Merchants Exchange building, San Francisco, is an enthusiastic advocate of regional and city planning and he has summarized his arguments in favor of same in the following appealing paragraphs:

The life of the community centers in the home which must be wholesome, accessible and agreeable.

A thorough survey is a necessary preliminary that a comprehensive group of probable developments may be had.

The plan must be governed by the laws of unity, variety, harmony and balance—as important in the design of a convenient and beautiful city as of a cathedral.

The city, a living organism, its plan ever guided by a definite art purpose must provide for adjustment to inevitable future growth.

LEGAL DECISIONS

NO BIDS REQUIRED FOR ARCHITECTURAL SERVICES

In North Dakota, as in several other states, there is a law to the effect that certain contracts awarded by municipal and county boards, and other similar bodies, must be made after competitive bidding and must be awarded to the lowest responsible bidder. But there is usually some such exception as that tacked onto the North Dakota law, and that is that the statute shall not apply to professional services.

Interpreting this exception, in the recent case of Rosatti vs. Common School District, 204 Northwestern Reporter, 833, the court decided that a school board may award a contract for architectural services in connection with the erection of a school building without advertising for bids.

In making this interpretation, the court seems to have regarded it as scarcely less absurd, if any less, to require a public board to award a contract for architectural services to the lowest bidder than it would be to compel the same board to select legal counsel by the same method.

RIGHTS UNDER INVALID CONTRACT

Where school board entered into contract with architects to furnish plans for building before bond election, recovery could not be had on contract, since board had no authority to make contract, since C. L. 1921, § 8405, providing high school district may be party to contract, applies only to those authorized by law. However, where, after the election, the board made use of the plans and advice of architects, circumstances are such that independently of lawful express contract or of authority of board to make contract, school district was liable on quantum meruit as to benefits received.—240 P. (Colo.) 464.

APPROVAL OR DECISION OF ARCHITECTS

Architect cannot issue certificate waiving express provisions in contract holding contractor liable for defective work or material.—205 N. W. (Iowa) 650.

Certificate issued by architect, after having been called in by parties who were unable to adjust matters between themselves, held to be final certificate, binding on all parties.—205 N. W. (Iowa) 650.

With the Architects

Building Reports and Personal Mention

Granted Certificates to Practice

The California State Board of Architecture, Northern District, has granted certificates to the following to practice architecture in the State of California: Frederick A. Chapman, 3512 Park boulevard, Oakland; Orlo R. W. Hossack, Worcester building, Portland, Oregon; Willis E. Huson, 347 Oakdale avenue, Mill Valley; Thomas J. Kent, 525 Market street, San Francisco; Lionel E. Peyser, 2447 26th avenue, San Francisco; Harold G. Stoner, 1418 Cavanagh road, Oakland; Laurence R. White, 1st National Bank building, Monterey.

On June 29th certificates to practice architecture were granted by the Northern Board as follows: William K. Bartges, 1022 Shattuck avenue, Berkeley; John I. Easterly, 2137 Tiffin road, Oakland; Wm. B. Farlow, 58 Sutter street, San Francisco; Robert A. Hutchinson, 1214 Webster street, Oakland; Reginald L. Mills, 1214 Webster street, Oakland; Mildred S. Meyers, 1201 Kohl building, San Francisco; W. P. Stephenson, 2520 Haste street, Berkeley.

The following applicants were granted architects' certificates at the last meeting of the California State Board of Architecture, Southern District: Richard J. Neutra, 835 Kings road, Los Angeles, and Archibald Dwight Gibbs, 119 E. Palm avenue, Altadena.

Steel Contracts Awarded

The Bancitaly Corporation has let a contract for the structural steel for the Fox Theatre in San Francisco, to the United States Steel Products Co. A contract has also been let to Dyer Brothers for a five-story steel frame addition to the Callaghan building at Market and McAllister streets, San Francisco.

State Architect Honored

State Architect Geo. B. McDougall has been made a member of the Board of Directors of the American Institute of Architects, which position carries with it that of regional director of the Ninth District, comprising the States of California, Nevada, and Arizona and the Pacific Island possessions.

Honorable Mention

Recently the American Gas Association held an architectural competition and Architect Ernest Irving Freese, 6247 Pine Crest drive, Los Angeles, received honorable mention for his design of a model home. A total of 363 plans were submitted by as many competitors.

Apartments and Garages

Architect William Bruce, 315 W. 9th street, Los Angeles, is preparing preliminary plans for a large apartment building to be built in the Southern California city for a Canadian capitalist. The estimated cost is $650,000. Mr. Bruce is also preparing drawings for a $55,000 apartment house in La Fayette road and St. Charles Place; a hotel for Mr. Thomas on Moneta avenue and seven garages for Mrs. Montgomery on Denker avenue, Los Angeles.

Architects Form Partnership

Friends of Architect C. W. Dickey, formerly of Oakland, will be interested to learn that he has decided to remain permanently in Honolulu and has formed a partnership with Hart Wood, who has been practising successfully in the Islands since he left San Francisco. Mr. Wood was at one time associated with Horace G. Simpson. Dickey and Wood have offices in the Damon building in Honolulu.

Architects Give Painting

A fine oil painting of the late President Roosevelt adorns the wall just back of the desk of the Hotel Roosevelt, San Francisco, a gift of Architects Fabre and Hildebrand, designers of the hostelry. The painting is a fine likeness, and was done by a local artist.

Six-Story Hotel

Architect Albert H. Larsen is preparing plans for a six-story steel frame and brick hotel to be built on the south side of Bush street, east of Jones, San Francisco, for Elias Rhine and R. J. O'Brien. There will be 120 rooms and several stores.

Sacramento Mercantile Building

The Eastern Outfitting Company will erect a two-story and basement Class C store and loft building at Sacramento from plans by Architects Starks & Flanders.

Richmond Residence

A two-story frame and stucco residence has been designed by Architect Ernest Flores, of Richmond, for L. W. Dicely. The house will be built in the Mira Vista District, Richmond.

Palo Alto Theatre

A Class A store building and theatre is to be built by Dr. Chas. H. Strub in Palo Alto from plans by Architects Miller & Pflueger, of San Francisco.

Oakland Architect Busy

New work in the office of Architect W. E. Schirmer, Thayer building, Oakland, includes an $18,000 English type residence in San Francisco for Dr. Sherman; a $12,000 residence in Lakeshore Highlands, Oakland, for J. J. Cox; a two-story English residence for Mr. Martin on Euclid avenue, Berkeley and a two-story brick veneer store and apartment house on San Pablo avenue, Oakland, for Peter Anderson. Bids for the Labor temple designed by Mr. Schirmer are in and under advisement.

Women's Club, Oakland

The Women's City Club of Oakland has taken a lease of the old Orpheum Theatre on 12th street, Oakland, and sketches have been made by Architect William I. Garren of San Francisco, for remodeling the building for club purposes. The alterations will provide for an auditorium, club rooms, cafe and a women's hotel with approximately 150 rooms.

Opens Factory Branch

The Birchfield Boiler Co. of Tacoma, Wash., announce the opening of a direct factory branch office at 454 Monadnock building, San Francisco. This office will be in charge of Mr. Guy L. Banta, treasurer of the company. Mr. Niel H. Peterson, formerly with George H. Tay Co., and the American Radiator Co., will be district representative.

Chico Architects Busy

New work in the office of Architects Cole & Brouchoud, of Chico, include a two-story reinforced concrete lodge building for the Odd Fellows of Corning, estimated to cost $30,000; a one-story and basement brick store building at Oroville for T. D. Sadler and an auditorium and classroom building for the Winship School District, Sutter County, to cost $20,000.

Apartment Houses

Architect H. C. Baumann, 251 Kearny street, San Francisco, has completed plans for a three-story brick veneer apartment house to be erected on the southeast corner of Alhambra and Mallorca Way, San Francisco for G. L. Nelson. Cost is estimated at $60,000. Mr. Baumann is also designing a $1,000,000 sixteen-story community apartment house facing Lake Merritt in Grand avenue, Oakland.

Oakland Residence

Architects Wythe, Blaine & Olson, whose new address is 1755 Broadway, Oakland, have recently completed plans for a Spanish type residence for A. E. Hunter of Oakland. It is estimated to cost $15,000. The same architects have taken bids for a Methodist Church at Hanford.

California State Board of Architecture

Northern District

Phelan Building, San Francisco

PRESIDENT - - - - - - - - - CLARENCE R WARD
SECRETARY - - - - - - - - - ALBERT J. EVERS
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Southern District

Pacific Finance Bldg., Los Angeles

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JOHN PARKINSON MYRON HUNT W. H. WHEELER

Los Angeles Office Building

Architects Walker & Eisen, Great Republic Life building, Los Angeles, have completed plans for a four-story Class B office building at Third and Main streets, Alhambra, for Walter P. Temple. Cost is estimated at $200,000. The same architects have recently been awarded contract for a thirteen-story Class A office building for the Security Title building, Incorporated, to cost $1,150,000.

San Francisco Theatre

Architect Mark T. Jorgensen, Alto building, San Francisco, is preparing plans for a Class A vaudeville and motion picture theatre to replace the present Liberty Theatre on Broadway between Stockton street and Grant avenue, San Francisco, for the North Beach Theatres Company. Mr. Jorgensen is also making plans for alterations to the Wigwam Theatre, Reno.

Contract For Yosemite Hotel

The James L. McLaughlin Company of San Francisco has been awarded a contract to build a Class A hotel in the Yosemite Valley for the Yosemite Park & Curry Company. The estimated cost is $300,000. Gilbert Stanley Underwood, 730 South Los Angeles street, Los Angeles, is the architect.

Club Building and Residence

Architect William H. Crim, Jr. has plans on the board for a country club building down the peninsula and a $20,000 residence with garage for A. L. Harrigan, to be built on Vallejo street, west of Fillmore, San Francisco.

Marysville Building

Construction has been started by George D. Hudnutt, Incorporated, on the new store and office building for Hart Bros., Incorporated, in Marysville, from plans by Architects Dean & Dean.

Santa Barbara Hospital

Architect A. R. Hutchason, 924 Van Nuys building, Los Angeles, has completed plans for a four-story Class A hospital for the St. Francis Institution at Santa Barbara. About $225,000 will be expended.

PERSONAL

The R. A. Herold Company will continue the architectural activities of the late R. A. Herold of Sacramento, with practically the same force with the exception of C. C. Cuff. The firm will be directed by P. J. Herold, brother of the late R. A. Herold.

Architect Arthur W. Hawes, who has been associated with Elmer Grey in Los Angeles for a number of years, has established an office for himself and is now located at 457 S. Western avenue, Los Angeles.

Architect Martin Klein announces the opening of an office for the practice of his profession at 1334 California way, Longview, Washington. Samples and catalogues are requested.

Architect Thomas F. Power, 2615 West Washington street, Los Angeles, would be pleased to receive catalogs and trade literature for his A. I. A. file.

W. J. Jamieson has been appointed city engineer of Phoenix, Arizona. Henry Rieger, city manager, who has for several months combined the duties of city manager and city engineer, will devote his time to the office of city manager.

Architect Allen Ruoff has moved his offices to 1075 new Subway Terminal building, Hill street between Fourth and Fifth streets, Los Angeles.

Architect Everett H. Merrill has moved his offices from 3981 W. Sixth street to 4475 Santa Monica boulevard, Los Angeles.

Architects Louis W. Simonson and Laurence Raymond White announce that they have associated for the practice of their profession with offices in the First National Bank building, Monterey, California.

Architect Ernest J. Kump of Fresno recently paid San Francisco a visit, combining pleasure with business. Mr. Kump and Mr. Arthur Johnson have a growing clientele in the Raisin City and Mr. Kump was in search of additions to the firm's drafting force.

Beezer Brothers, architects, formerly of 1915 Steiner street, have opened offices at 580 Market street, San Francisco.

Architect Hart Wood of Honolulu is visiting friends in San Francisco. He is accompanied by his wife and two children.

Architect A. H. Albertson, Henry building, Seattle, has been elected director of the eighth district of the A. I. A. with jurisdiction over Colorado, Utah, Idaho, Washington, Montana and Oregon.

Architect L. L. Dougan of Portland has moved from the Western Bond & Mortgage building to 613 Kramer building.

Architect Joseph Losekann has been appointed city building inspector of Stockton, succeeding Ivan C. Satterlee, who has resigned to become associated with the Davis-Heller Co., architects and engineers of Stockton. Mr. Satterlee was formerly a member of the architectural firm of Wright & Satterlee.

Frank Wynkoop, building designer, has moved from 800 Kress building to 702 Kress building, Long Beach.

Paul Bailey, for the past ten years chief deputy in the California State Department of Enginering, has been appointed acting state engineer to fill the vacancy caused by the death of W. F. McClure.

Architect D. D. Smith has moved his office from 1259 Third street to 601 Wilshire boulevard, Santa Monica.

Architect Lloyd Rally has moved his offices from 1005 Wright & Callender building to 1101 Subway Terminal building, Los Angeles.

W. H. Judson of the Judson Studios, Los Angeles, recently left on a three months' tour of Europe. He will make a special study of antique windows in the cathedrals of England, France and Italy.

Architect F. Stanley Piper, Bellingham, has moved from the Triangle or Old Herald building to the New Herald building.

Architect George M. Rasque of the firm of Link & Rasque, Spokane Savings and Loan building, Spokane, announces that his firm has nine school buildings under way at the present time, either in the hands of contractors or on the drafting boards.

Architects Morrison and Stimson, with offices in Seattle, Everett and Bellingham, have moved their Bellingham office from the Kirkpatrick building to the new six-story Herald building.

Awarded First Prize

In recognition of his invention of log carriage devices described "as one of the most radical changes that has been made in sawmill machinery in twenty years," E. H. Percy, chief engineer, Union Lumber Company, Fort Bragg, has been awarded first prize in the National Lumber Manufacturers Association's Waste Prevention Contest. The prize was $1,000 cash.

W. H. Ferguson, machine shop foreman of the Coos Bay Lumber Company, Marshfield, Oregon, drew the second prize of $500 for the invention of a "line and delay graphic recording device for sawmill carriages."

Seven-Story Building

Architects Reid Brothers of San Francisco, are preparing plans for a seven-story building to be built on Ocean Beach, San Francisco, for Ainsworth Brothers of New York.

Uniform State Building Code Nearly Completed

THE proposed uniform building code which has been under preparation since December, 1925, by the executive committee of the Pacific Coast Building Officials' Conference is nearing its final draft and will be completed and presented for approval at the fifth annual meeting of the officials in San Jose, September 20 to 23.

During the last week in May the head building officials of twenty Pacific Coast cities held daily sessions in Sacramento to discuss and revise the proposed code, to bring it to a point most acceptable to all and to incorporate the requirements most suitable.

According to J. E. Mackie, inspector of buildings at Long Beach, secretary and consultant of the conference, the code avoids detailed specifications so far as possible. It adheres closely to the fundamental principles of structural engineering. It provides for the use of all materials and methods of construction that have proved their fitness, and leaves the door open to new materials that may be developed in the future.

The arrangement of the unified code, while subject to further change, now comprises one classification of buildings into various kinds of occupancy, a second classification based on location in so-called fire zones, and a third based on types of construction. The requirements of the law, which are necessary for public health and safety, are based primarily on these three classifications. An apartment building, for illustration, must be planned and designed in accordance with certain requirements that have particular reference to the use of the structure as an apartment building. It must be located in a certain way with respect to the lot lines. Other regulations deal with stairs and elevators and their inclosing walls, still others deal with light and ventilation, with fire-extinguishing apparatus, and so on.

Certain modifications in some of the foregoing regulations will depend on whether the building is located in fire zone one, two or three. Other modifications will depend on the type of construction.

Fire zone one will in general comprise the central business district of a city. Buildings in zone one must be built with a fairly high degree of fire resistance. Zone two will include the close-in areas immediately surrounding the central business district, in which restrictions will be less severe than in zone one. The remaining area will be in zone three, with restrictions least severe.

Based on types of construction, the revised draft of the code classifies buildings either as fireproof, as incombustible, as heavy timber construction, skeleton construction, ordinary joisted, all metal, or wood frame.

Other parts of the code cover administration, definitions, engineering regulations, quality of material, details of construction, fire-resistive standards, and regulations governing use of streets during construction.

On the whole, the proposed uniform building code will simplify building law enforcement because it is a modern, well-written document, devoid of ambiguities and contradictions. One expert who examined the code expressed the opinion that it will be found thoroughly workable. There is little question, he said, that this code has received more intelligent and careful consideration than is true of any city building code now in use.

Up to this point the preparation of the uniform code has been under the direction of the executive committee of the Pacific Coast Building Officials' Conference, consisting of R. L. Proctor, Seattle, president; C. E. Jenkins, Alhambra, vice-president; A. C. Horner, Stockton, secretary-treasurer; Jas. S. Dean, city architect of Sacramento; H. E. Plummer, Portland; S. P. Koch, Berkeley; M. C. Woodruff, San Jose; Oscar Knecht, San Diego, and W. P. Wethers, Longview, Wash.

Mechanical Engineers Convene

The American Society of Mechanical Engineers held its annual convention in San Francisco June 28 to July 1st, with nearly 400 delegates in attendance.

One of the events of especial interest was the presentation of the American Society of Mechanical Engineers gold medal to Dr. Robert A. Millikan, head of the California Institute of Technology. The presentation took place at the annual banquet at the Palace hotel. The medal was awarded to Dr. Millikan in recognition of his contributions to science and engineering.

Among the delegates to the convention were James Hartness, former Governor of Vermont; C. N. Lauer, who attained fame during the war as a designer of torpedoes, and Dexter S. Kimball, dean of the college of engineering at Cornell University. Hartness and Kimball are past presidents of the society. Kimball is president of the American Engineering Council, an organization which represents more than 50,000 engineers in the United States.

Entertainment of the delegates was in the hands of Warren M. McBryde of San Francisco, Frederick Birdsall, C. M. Gunn, E. M. Breed, E. B. Bumsted, A. J. Dickie, Ely C. Hutchinson, J. A. Kinkead, Bruce Lloyd, Elgin Stoddard, and H. L. Terwilliger.

Progress of Simplified Practice as Affecting the Building Industry

Editor The Architect and Engineer,
Dear Sir:

At the National Conference of Business Paper Editors held in Washington, D. C., May 10th, considerable interest was shown in what the Business Paper Editors might do to give their readers a better understanding of the progress of Simplified Practice.

Because of this interest, I venture to suggest the following:

First—In the 55 completed simplifications on the enclosed list, the grand average elimination runs so close to 80 per cent we may safely say "80 per cent of the business is done in 20 per cent of the varieties offered." Especially is this true when you consider many of these simplifications represent initial efforts. Further eliminations will lift the grand average. Your readers might be interested in determining if this axiom holds true in their businesses.

Second—A recent audit of 11 recommendations shows the average percentage of adherence or degree of observance is 82 per cent. In these lines, from 64 to 99 per cent of last year's output was in accord with the simplified lines. This shows the industries concerned are finding simplification pays.

Third—Savings estimated by leaders in different fields range from $1,000,000 per year in paving bricks to $200,000,000 per year in lumber. Actual "dollars and cents" values of simplification are hard for us to get.

Fourth—Manufacturers of commodities in the accompanying list, who may not be recognizing the recommendations covering their products, might find it advantageous to accept and apply those recommendations to their own output.

Fifth—Manufacturers and distributors now observing a specific recommendation will undoubtedly find it pays to advertise the availability of the simplified line.

Sixth—Manufacturers and others purchasing items covered by a Simplified Practice Recommendation ought to save money by placing their orders for such items in terms of the recommended simplified line.

We will appreciate your advice and counsel as to these and other methods of determining the extent to which the public is benefitting from this effort toward waste-elimination.

Cordially yours,
(Signed) R. M. HUDSON, Chief,
Division of Simplified Practice.

Editor's Note—Following is a list of the more important reductions that have been made in building materials to date by the Simplified Practice Division:

ITEM	Reduction in Varieties From	To	Per Cent Reduction
Vitrified Paving Brick, Fourth Revision Conference	66	4	94
Metal Lath	125	24	81
Asphalt (Penetrations)	88	9	87
Rough and Smooth Face Brick	75	2	97
Common Brick	44	1	98
Range Boilers	130	13	90
Woven Wire Fencing	552	69	87
Woven Wire Fence Packages	2072	138	93
Hollow Building Tile	36	19	48
Structural Slates for Plumbing and Sanitary Purposes	Average Reduction—84		
Roofing Slates, Descriptive Terms, Thicknesses and Sizes	98	48	51
Blackboard Slates, Slab Heights and Sizes	251	25	90
Lumber	Standard Nomenclature Grades and sizes for soft-wood lumber		26
Builders Hardware (Items)			71
Builders Hardware (Finishes)			
Asbestos Paper—Size, Widths, Weights of Rolls	14	8	43
Asbestos Mill Board—Sizes, Thicknesses	10	5	50
Brass Lavatory and Sink Traps	1114	72	94
Hot Water Storage Tanks	120	14	88
Steel Reinforcing Bars—Cross-sectional areas	40	11	73
Sheet Steel	1819	268	85
Eaves Trough and Conductor Pipe	21	16	24
Concrete Building Units (Length, Width and Height of Blocks, Tile and Brick)	115	24	80
Steel Lockers	65	17	74
Sand Lime Brick (Length, Width and Height)	14	3	79

A New Door Closer

L. C. Norton, formerly connected with the Norton Door Closer Company of Chicago, now president of the Norton Lasier Company of Chicago, is designer of a new door check. Mr. Norton has devoted his life to the invention and perfection of door-closing devices and he offers to the building public now, as the culmination of years of effort, a closer which he believes far exceeds any previous development in door closers.

This new closer is constructed on the rack and pinion principle. Among the new features are a new coil with large inside and outside diameter, giving more power and flexibility; regulating screws set at the factory for proper adjustment; a shaft of triple bearing frictionless design; a hold-open feature at the ends of the arms exceedingly simple to operate with no lugs or springs to wear out. The material used in the manufacture of the product is of the highest quality and workmanship.

The L. C. Norton Company, located at 51 Jessie street, San Francisco, is the headquarters on the Pacific Coast for this new closer.

The Plumber Again

A plumber working on a new house was late one morning and the boss asked him, "You are late. What's the matter?"

"Yes, I had to stop and have my hair cut."

"What! You mean you had it done on your employer's time?"

"Sure I did. It grew on his time."—One of Will Rogers "Worst Stories."

BELVEDERE APARTMENTS
C. H. Ferber, Architect

Is Iron Economical for Cornices?

By H. F. COPE

IRON is being used more and more in decorative cornices because of its economy. With building costs at a high level, it is not strange that a low price should be more of a consideration now than formerly.

The significant thing about the situation, however, is this—the durable, but not costly cornice of today is being revived by the architect. He is doing this because he can again get sheet metal with the rust-resisting qualities comparable to the old-fashioned iron distinguished for its long life.

The recent advent of heavy gage iron of rust-resisting qualities has turned the tide. While the cost of such iron is naturally higher than the price of ordinary sheet metal, its service life is such as to make it very acceptable to the client who must pay the bills.

The wide range of gages now obtainable also makes modern iron more suitable for cornices. Heavy 24-gage iron is often used, yet it weighs much less than a similar stone cornice would weigh. Therefore the strength of supporting members may be reduced.

Mr. C. H. Ferber, a Cincinnati architect, recently decided in favor of sheet

DETAIL OF CORNICE, MADE OF ARMCO SHEET METAL, BELVEDERE APARTMENTS

netal cornices when preparing plans and pecifications for a palatial new apartnent house to be erected in that city.

This apartment building, The Belvelere, is crowned with the largest cornice ver erected in Cincinnati. The main ornice is 523 feet long, stands 8 feet igh, and projects 3 feet beyond the line f the building. In addition to the main ornice, there is 268 feet of plain corice on the rear of the building and 238 eet of plain cornice surrounding the top f the pent house.

Another element, much stressed of late ears, especially in earthquake zones, is safety." That iron cornices eliminate he danger of falling pieces is unquesioned. The importance of this is forcefully brought to mind when we read in he newspapers that "another person has been killed by a piece of falling cornice."

As to the decorative advantages of sheet metal, a novel effect is sometimes obtained by finishing iron cornices to look like stone. The iron is first covered with a sticky paint, and then sand is dusted on. Here, again, the economy of the sheet metal cornice stands out, because it fits into the architectural scheme perfectly. Such advantages are being recognized rapidly, judging from the large number of metal cornices being erected today.

Now at Home in New Building

C. A. Dunham Company, manufacturers of the Dunham system of heating, announces the removal of its administrative and general offices to the Dunham building, 450 East Ohio street, Chicago, Ill. Affiliated companies, including the Young Pump Co., Dunhameter Corporation, Walter H. Prier Co., and the Dunham Building Corporation will have offices in the same building. D. H. Burnham & Co., were the architects of the structure.

Many factors have contributed to the growth of the Dunham Organization with factories in Marshalltown, Iowa, and Toronto, Canada, with over sixty branch and local sales offices in the United States and Canada, and a dozen or so foreign sales offices in the United Kingdom, Europe and Asia. To quote an official of the company. "Most important of all of these is the fact that always the name Dunham has stood for progress in the science of heating, for quality in product, for integrity in manufacture and in service, and for an idealism that is interpreted by conservative business principles which are as clean cut and straightforward as they are resourceful.

"A. Dunham System means heating service to the owner. He invests his cash in certain metallic fittings, etc., but he does not buy those parts that he may possess them, but that he may possess that which they make possible."

BRICK PANELED WALL, WAREHOUSE OF RICHMOND AND PORT COSTA BRICK COMPANIES, OAKLAND

Oakland Warehouse for Richmond Brick

UNITED Materials Company announce the completion of their Oakland warehouse at 3435 Ward street. A group of buildings, centrally located, assures increased efficiency in the delivery of stock to all points in the East Bay district. Besides a commodious warehouse the company has built a district office in charge of Samuel Hannah, who divides his time there and at the Oakland Builders' Exchange.

A feature of the new yards and warehouse is a series of panels showing the various kinds of brick manufactured at Richmond and distributed by the United Materials Company. The brick are laid up in different styles with vari-colored mortar, thus giving one an excellent idea of how they will look on a building. Large stocks are carried, ready for immediate delivery, of dark, medium and light red pavers, red press brick, red rugs and ruffles, besides oven and sewer brick.

YARD VIEW OF WAREHOUSE, RICHMOND AND PORT COSTA BRICK COMPANIES, OAKLAND

BOOK REVIEWS

Edited by
CHARLES PETER WEEKS

The Concrete of the Architect and Sculptor, by John J. Earley with introduction by Lorado Taft, published for free distribution by Portland Cement Association, Chicago.

Mr. Taft is internationally known as a sculptor and naturally speaks from experience. Mr. Earley's presentation is intelligently handled by a man who has had abundant practical experience. The booklet should be read by every architect if he would have a keener understanding of concrete, and what it means to him and to the artist.

Architectural Construction — Volume 11, Book 10 Wood Construction by Voss and Varney. Published by John Wiley & Sons, Inc., 440 Fourth avenue, New York. Price $6.50.

Replete with invaluable information for the architect and draftsman. Profusely illustrated. Review in August issue.

Where the Building Dollar Goes

The comparative cost of each item in the average building job has been worked out by the United States Department of Labor so as to show just how the building dollar is divided.

The figures include both labor and material costs, labor amounting to 59.5 per cent of the total. The New York "Times" thus reprints the Labor Department's estimates:

Material and Labor	Out of Building Dollar (In Cents)
Foundations and masonry	36.10
Carpentry	29.10
Plumbing	10.00
Heating	8.70
Hardware, metals	7.60
Paint	6.50
Electrical work and fixtures	2.00
Total	100.00

In this connection the Department presents figures showing the division of the construction cost of the average five-room - and - bath stucco house, costing $8,000, with lot:

Work	Cost	Percentage
Excavation	$ 60	.07
Masonry	480	6.00
Carpentry	600	7.05
Lumber	848	10.06
Hardware	120	1.05
Mill work	935	11.67
Painting	380	4.17
Plastering and stucco	820	10.25
Tile bath	60	.07
Sidewalk	91	1.14
Grading and sodding	100	1.25
Furnace	330	4.16
Wiring	107	1.33
Fixtures	160	2.00
Plumbing	600	7.50
Papering	135	1.66

Cyanite Makes High-Grade Fire Brick

An investigation of the properties of brick, made of cyanite, a fire-resisting material, has been partially completed by M. S. Freed, Research Associate for Henry A. Golywnne at the Bureau of Standards, Department of Commerce. The material was taken from a recently discovered deposit in India, and much of it contains over 95 per cent pure cyanite. Cyanite, either raw or calcined, pure, or bonded with clay, produced refractory bodies capable of withstanding standard and modified laboratory tests for high-grade refractories. The bodies showed excellent resistance to spalling and to deformation under load at high temperature. They also showed a uniform and low thermal expansion and a high melting point. Petrographic analyses indicated complete conversion of cyanite to mullite in the test specimens and the results of the laboratory test indicate the bodies to be the equal in quality of many so-called "super-refractories" now on the market.

Made Coast Manager

J. E. Jellick, since December 15, 1923, district engineer in charge of the Los Angeles office of the Portland Cement Association, was on June 1 made manager of Pacific Coast offices.

The territory under Mr. Jellick's supervision includes Arizona, California, Oregon, Washington, British Columbia, northern Idaho and southeastern and western Nevada. Association district offices in this territory are located at Los Angeles, San Francisco, Portland, Seattle and Vancouver.

Mr. Jellick's headquarters will be in the San Francisco office of the Portland Cement Association, 785 Market street.

Amos H. Potts succeeds Mr. Jellick as district engineer in charge of the Los Angeles office.

A New Incinerator for Apartments

The Goder Incinerator Corporation of Chicago, Illinois, is now represented in Northern California by M. E. Hammond whose office is on the mezzanine floor of the Pacific building, 821 Market street, San Francisco.

The Goder Incinerator Corporation are makers of a full line of waste disposal furnaces for municipalities, industrial plants, hospitals, hotels, apartments and private residences. The Goder system of waste disposal by incineration can be applied to any and every problem of refuse or garbage disposal whether it means a bushel or 500 tons a day.

The Chimney-Fed Goder incinerator for apartment houses has several noteworthy features. A step grate is used, and there are no dumping grates or movable parts. This permits more garbage per square foot of grate area to be burned.

NEW HOME OF H. C. REID & CO., SAN FRANCISCO
Earl Markwart, Engineer

New Building For H. C. Reid & Co.

Lindgren-Swinerton, Inc. have recently completed for H. C. Reid & Co., electragists, a two-story office building, shop and warehouse, 25x80 feet, at 389 Clementina street, San Francisco, designed by Engineer Earl Markwart. The structure is a fine example of the modern industrial home planned and built to meet the demands and special requirements of the electrical contracting business. The building has been finished with the usual high grade methods followed by the Lindgren-Swinerton Company.

H. C. Reid has conducted a successful electrical contracting business for the past six years. The former location at 115 Mission street long ago became inadequate to properly serve the needs of the concern but it was not until the early part of June that the larger quarters pictured above were completed and occupied.

Recent electrical contracts performed by Mr. Reid include the Standard Oil office building, San Francisco, the new Hotel Del Monte and Peninsula Country Club and the power plant at Del Monte which is equipped with a high tension turbine generator set. The Adam Grant building is being wired by the Reid organization and they have lately been awarded all electrical work on the new Hunter-Dulin twenty-five story building under construction on the site of the old Lick Hotel, San Francisco.

Passing of Mr. W. F. McClure

State Engineer W. F. McClure of California and head of the department of public works, died suddenly June 22 while inspecting the Sly Park dam site near Placerville. Mr. McClure was gathering data for a report on the El Dorado Irrigation project and was accompanied by his assistant, E. C. Eaton, irrigation engineer of Sacramento, and Joseph Spink, engineer, and Roger W. Browne, secretary of the El Dorado Irrigation District. Death was due, according to the physician called, to dilation of the heart as the result of acute indigestion.

Mr. McClure was 68 years of age. He was born in Ohio, but spent his boyhood days in Penssylvania. Prior to coming to this state in 1883 he located and built hundreds of miles of railroads in Missouri, Arkansas, Kansas, Texas and New Mexico. He was appointed chief of the division of engineering and irrigation of California by Governor Hiram Johnson and held that position until his death. He was a man of fine judgment. He stood high in his chosen profession and was liked by his associates who will mourn his sudden passing.

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American Association of Engineers

Donald M. Baker, a consulting engineer of Los Angeles, has just been elected second vice-president of the American Association of Engineers, and has gone East to attend the National convention in Philadelphia. Mr. Baker has been the National Director for this district for the past two years, and is now a director of Los Angeles Chapter.

Other newly-elected National officers are: President, C. J. Ullrich of Salt Lake City; first vice-president, W. R. Harris of Chicago and J. M. Buswell of Fresno succeeding Mr. Baker as director of District No. 2, comprising Nevada, California and the Hawaiian Islands.

Professional engineers, according to Mr. Baker, are being drawn more and more into the public affairs of the nation, and it is fitting that their national convention should be held during the Sesquicentennial Exposition, where the progress of the past 150 years will be displayed, since a large part of that progress is the result of the efforts of engineers.

Among other matters of importance, both to the profession and to the public, which will come up for consideration at the convention, are the support of the movement to create a Federal Department of Public Works; the extension to other states of laws, now existing in over half the states in the Union, which require the examination and registration of professional engineers; recommendations as to changes in the present day engineering courses given in schools and colleges; and the endorsement of the early development of the Colorado river.

The May dinner meeting of the Los Angeles Chapter, American Association of Engineers, was held at the Windsor Tea Rooms on Thursday evening, May 27th. A tentative constitution for the proposed Construction Industries Council of Los Angeles was ratified by the members present. The Chapter has been invited to become a member of this Council, which is to be composed of organizations interested in various phases of the construction industry, and is being formed to secure the co-operation of the different interests in promoting the welfare of the industry.

President Olmsted, speaking as a taxpayer, strongly condemned the proposal to lay off some 300 technical men in the City Engineering Department, and a resolution was adopted protesting this proposed action. In accordance with a letter from the Los Angeles Chamber of Commerce, the Chapter also went on record as opposed to an occupational tax.

At the conclusion of the business meeting, Mr. Wilbur D. Cook, Jr., landscape architect, delivered an interesting address on community planning.

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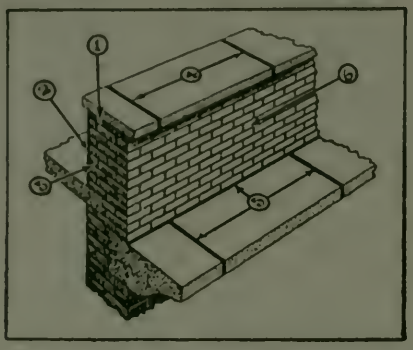
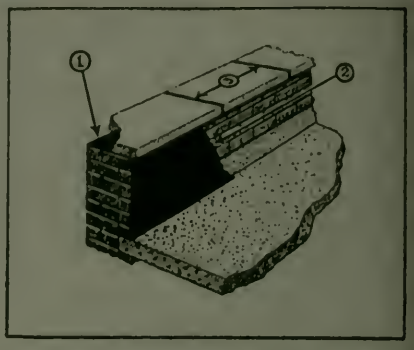
AUGUST 1926

HORN-WATER-PROOFINGS



1. Water-proof Cut-Off of Dehydratine No. 6 on top of Parapet Wall under Coping.
2. Rear of Parapet Wall Water-proofed with Dehydratine No. 6.
3. Flashing turned in.
4. Joints in coping raked out ½ inch and pointed with Vulcatex.
5. Joints in Cornice to be raked out ½ inch and pointed with Vulcatex.
6. Mortar used in laying up brick-work water-proofed with Hydratite to insure against leakage and efflorescence.



1. Water-proof Cut-Off. Top of Parapet Wall under coping primed with Dehydratine No. 4, then given trowel coating of Dehydratine No. 6.
2. Rear of Parapet Wall primed with Dehydratine No. 4, then coated with Dehydratine No. 6.
3. Joints in coping raked out ½ inch and pointed with Vulcatex.

PROBLEM I

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Damp interiors, disintegration of masonry and efflorescence of exterior surfaces, resulting from the points of leakage shown in the above drawing.

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The ARCHITECT and ENGINEER

VOL. LXXXVI AUGUST, 1926 No. 2

The Temple Emanu-El, San Francisco*

A Talk Before the Ladies' Guild

By ARTHUR BROWN, JR.

WHEN Mrs. Sahlien, a few days ago, asked me to talk to you about the building of this Temple I was very much puzzled for I have a feeling that a work of art should explain itself and that the emotions which it arouses should be direct impressions. Moreover, it is not exactly the role of one directly involved in the production of an artistic creation to express an appreciation of its character. This should rather be the work of a sympathetic spectator to whom the language of Architecture has a definite appeal and who can express his impressions in the medium of words. I hope that Dr. Newman is going to do this as I know that he feels very strongly about it.

However, I myself have always been very curious to know what has been going on in the minds of those who create and I have in my library a whole shelf of books of biography and memoirs of famous artists and I find it a most absorbing source of interest to read the discussions of the whys and wherefors of great works.

Charles Garnier, after the completion of the Opera in Paris, wrote his impressions which read like a romance and are invaluable as a guide to anyone undertaking a similar venture.

To try to discover from their own testimony as well as from the results of their labors what has led men to act in certain ways is one of the objects of historical study. This method is very fruitful in the study of the various arts and sciences.

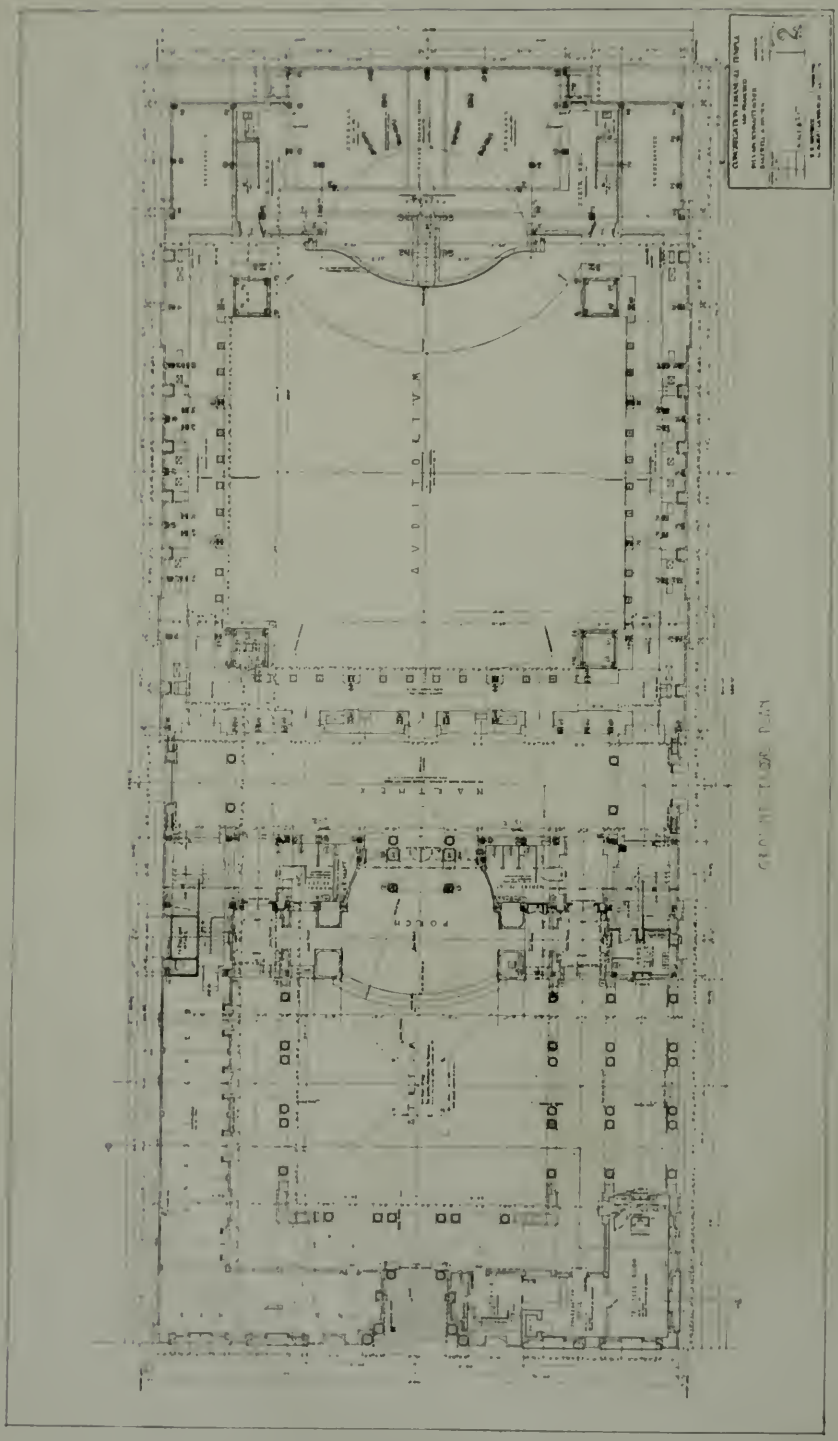
Some account of the genisis and development of the Temple may therefore be of interest to you whose house of worship it is, and who have made sacrifices that it may be a worthy structure.

When the committee was first formed and the architects called in, my colleagues and myself, the ideas of what form the Temple should

*The new Temple Emanu-El was constructed by the late Sylvain Schnaittacher and Bakewell & Brown as associated architects. Mr. Bernard Maybeck and Mr. G. A. Lansburgh acted as consulting architects to the trustees of the congregation. Messrs. Dewell & Seage prepared the structural designs, Mr. Atkins designed the mechanical equipment and Mr. Weihe of Bakewell & Brown's office prepared the architectural drawings.

The Temple was built at an approximate cost of $1,200,000. The materials used in construction are steel frame and reinforced concrete with cement stucco exterior and terra cotta tile roof.

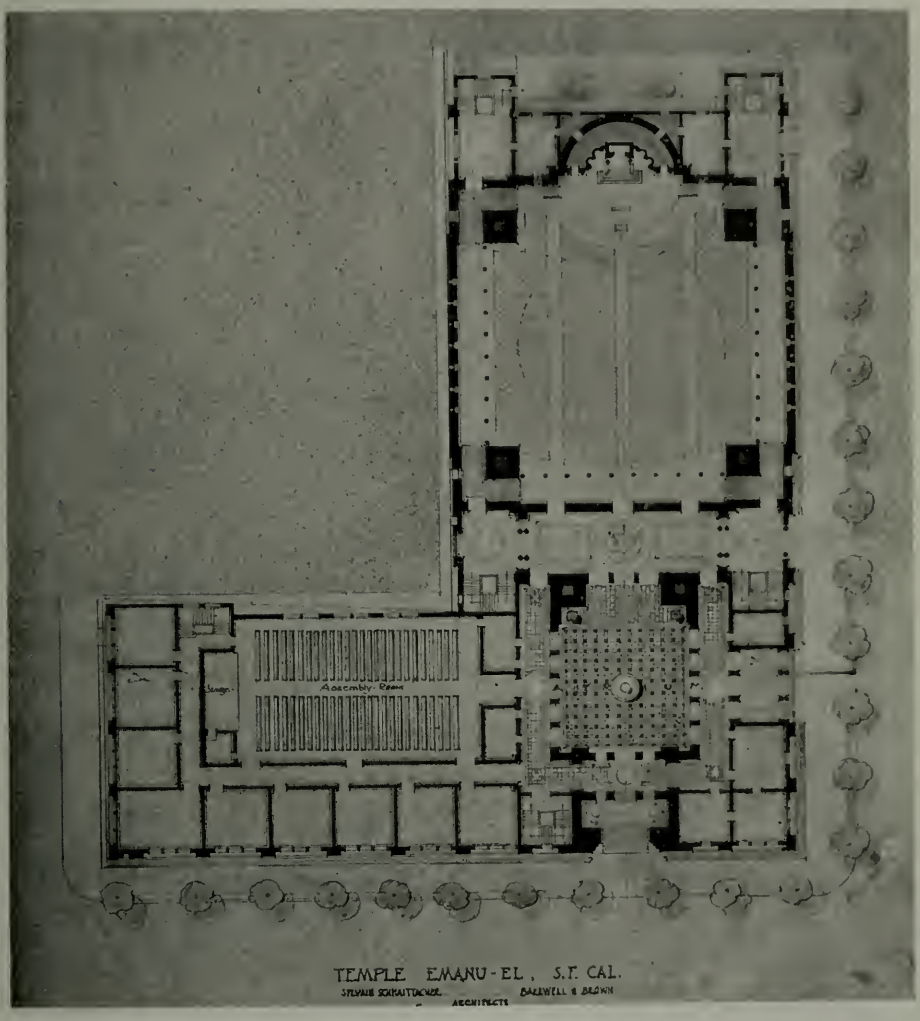
Acknowledgment is made to the San Francisco Chronicle and Gabriel Moulin for photographs.



PLAN, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
S. SCHNAITTACHER AND BAKEWELL & BROWN, ARCHITECTS

take were very hazy. The committee had a plot of land and they knew that they wanted a sumptuous building. They also had hanging over them the very humdrum necessity that even with the self sacrifice of the members of the Congregation, there was a limit to the amount of money to be spent and that only with greatest care could the funds available be made to suitably house all the Congregation activities.

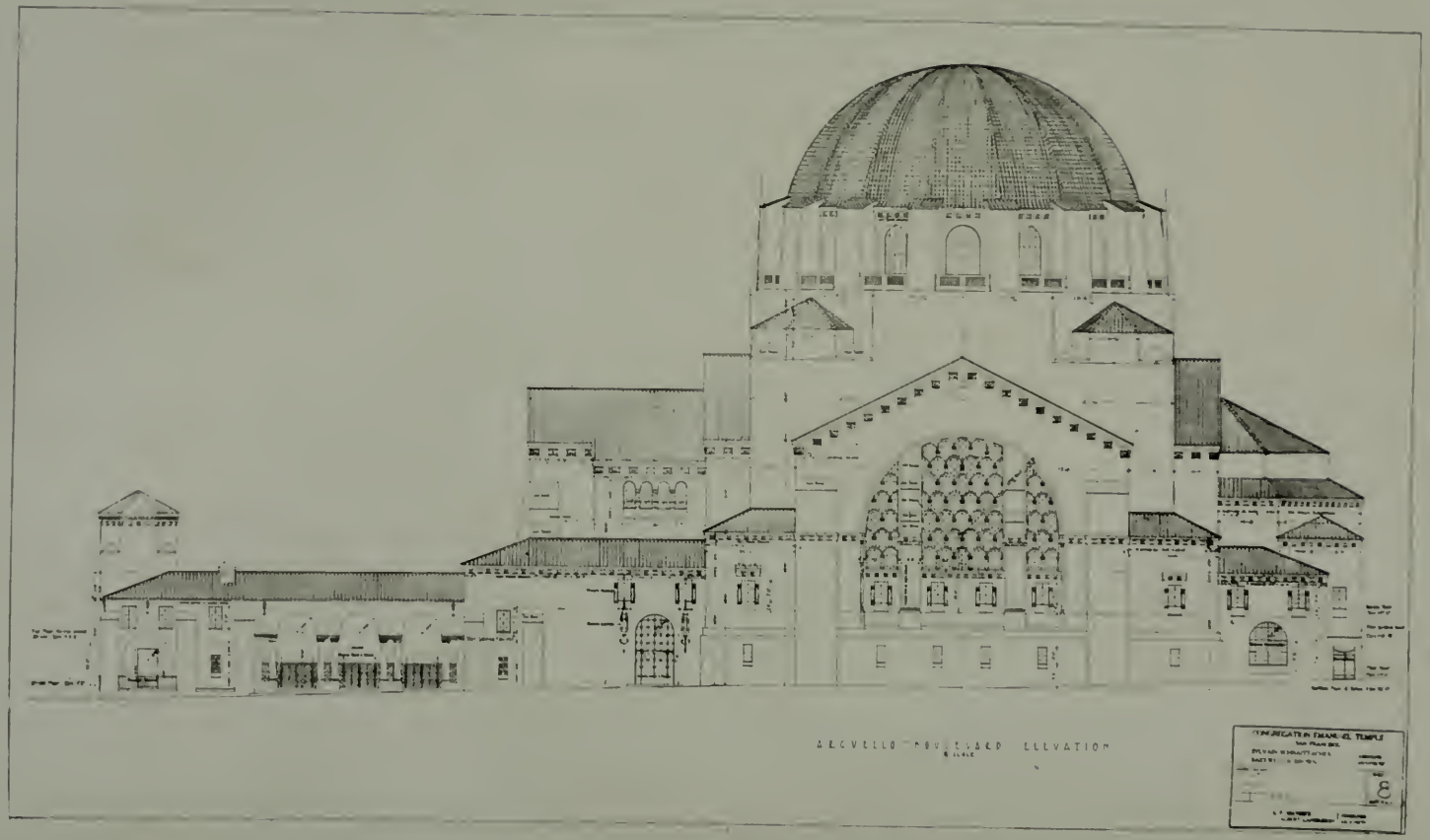
The program, however, was clear enough and was the expression



PLAN, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
S. Schnaittacher and Bakewell & Brown, Architects

of many years of experience at the old synagogue on Sutter street and the hopes and dreams that were there inspired.

The dominating need was of course this great auditorium to seat not less than 1700 people and to be clothed in as glorious form as the funds would permit. In the second place was to be a Temple House, hardly less important in the eyes of the Rabbi and the Trustees, to include another auditorium of about half the capacity of the great



ELEVATION, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
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LOOKING SOUTH. CONGREGATION EMANU-EL TEMPLE. SAN FRANCISCO
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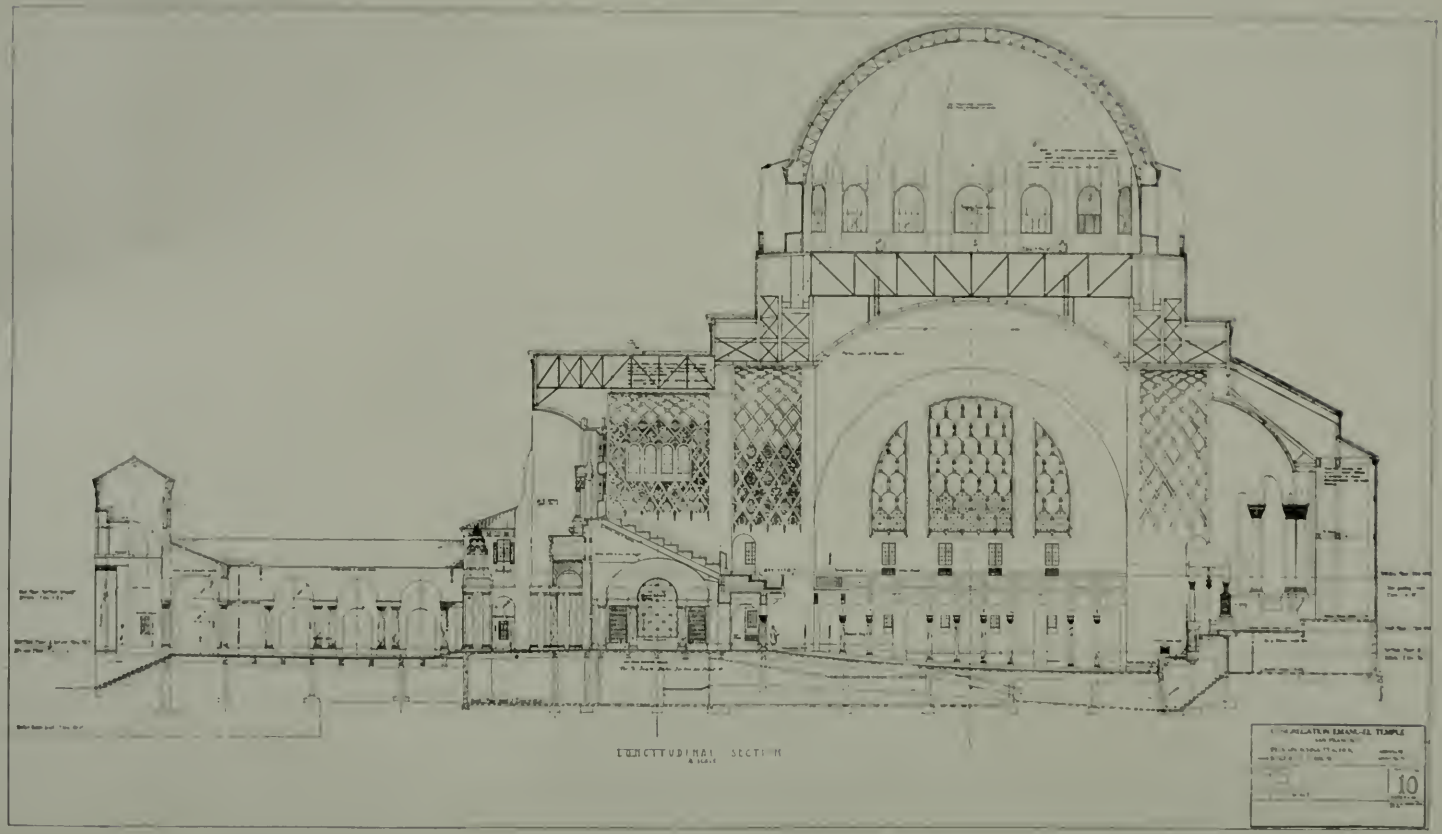

SECTION, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
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LOOKING NORTHWEST. CONGREGATION EMANU-EL TEMPLE. SAN FRANCISCO
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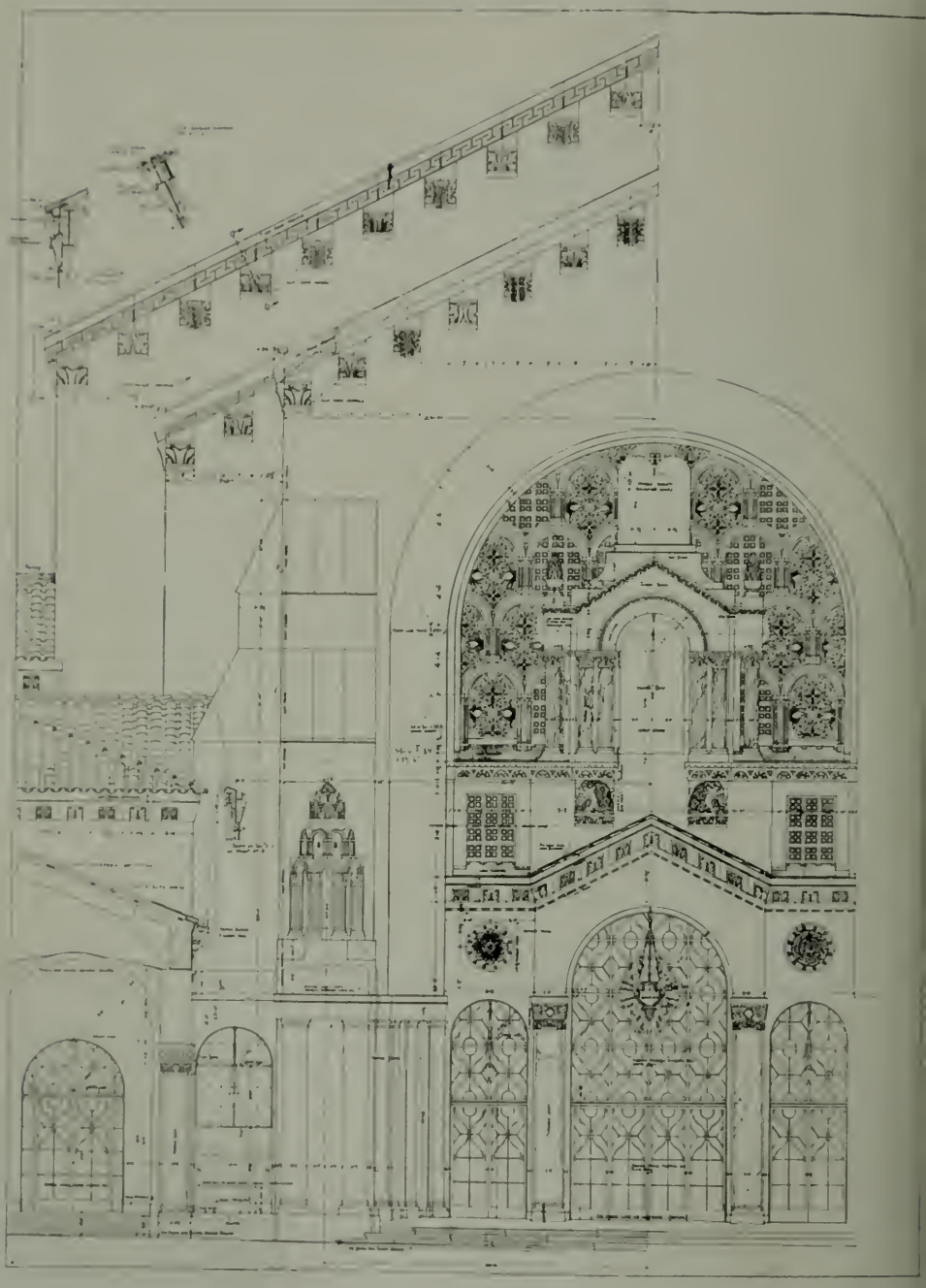

DETAIL MAIN PORTAL, CONGREGATION EMANU-EL TEMPLE
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COURT AND MAIN PORTAL, CONGREGATION EMANU-EL TEMPLE
S. SCHNAITTACHER AND BAKEWELL & BROWN, ARCHITECTS

Temple itself and 25 Sunday school class rooms. The Temple house was to have also a vast recreation hall for the children and accommodation for the social gatherings of the grown ups.

In addition to these elements was to be a third group to house those who have to do with the religious and administrative work of the Congregation, the Rabbi's study, the Cantor's study, the Board room of the Directors, with the Secretary's office and the Library. Accompanying all this, of course, were a quantity of accessories, vestries for the choir, store rooms, et cetera.

The general distribution of these elements as you now see them was soon fixed upon as no other suggested arrangement seemed to present such possibilities both from a decorative point of view as well as one of convenience.

The cloistered court preceding the great mass of the body of the Temple seemed a marvelous chance to attain a powerful contrast and play of masses. It appealed also as a very desirable transition from the outside world to the seclusion of the House of God. The low buildings of the cloister provide the necessary space for the library and the administrative offices. The placing of the Sunday School with its auditorium enveloped by the school rooms comes as a natural consequence in the grouping of the major masses.

After these preliminary steps a number of puzzling questions arose —what construction material would be best? What general type of architecture would be appropriate and financially possible? What steps should be taken to ensure good acoustics? Should the floor of the Temple slope? Should there be pews or folding seats? And dozens of other limiting conditions.

After the first sketches of the masses involved were made, it became apparent that the group was to be of very imposing dimensions—(the volume included in this auditorium is considerably greater than that of the Paris Opera)—and that great caution would have to be used not to exceed a reasonable sum in the cost of construction.

After careful consideration it was decided to abandon the idea of such sumptuous materials as cut granite or marble for the execution of the fabric and to adopt steel and concrete which insure stability and permanence without the staggering costs of solid masonry. This type of construction also brought up visions of those superb monuments in the Levant—such as Sancta Sofia in Constantinople—which have that southern flavor which seems to touch a sympathetic chord in those that live in California. I might say at this point that although the Temple may suggest Byzantine models it is not a pastiche or plagiarism in any way but is a straight forward and sincere development of the requirements of the program.

I feel confident that the captious modernistic critic, although he may find faults in the result, will discover little in the spirit of its design for his sincere disapproval.

These conclusions set the palette of our design, the elements of the composition began to define themselves, great walls of simple plaster, columns, arch forms, low tile roofs, the splendid dome motive, and all that goes with these to enhance their decorative values and to glorify their form. Of all architectural forms yet imagined by the mind of man, the dome is, I feel very strongly, the most superb, the most noble and most deeply inspiring. There are other forms of great and imposing beauty, Gothic spires, Roman Basilicas, great temples, but the dome surpasses them all in impressive nobility and beauty. It is most

COURT, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
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INTERIOR, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
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CLOISTER, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
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INTERIOR, CONGREGATION EMANU-EL TEMPLE, SAN FRANCISCO
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appropriately used when men wish to give material form to their most exalted sentiments. The near East has many beautiful domes—in fact, it was in Persia that the dome on pendentives was first conceived and it was slowly developed in the lands about the Mediterranean until its culmination in Sancta Sofia which many keen critics consider the high water mark of antique art. The composition was established and the task of development was the joyful work of the artist. The masses were proportioned and pulled and twisted (on paper of course) in very much the way that a sculptor works, the parts subordinated to the whole, the details planned to contribute to the general effect and at the same time to be interesting in themselves. Unity, harmony, rhythm, appropriateness, these were the aims always present in our minds. The result is a work of a distinctly religious character. Just why this is so I shall leave to some one more skilled in psychological analysis. After the majestic form of the dome with its four great arches had been set, the forms of the tracery of the windows, the fish scale leads, the minor arches of the galleries, the form of the organ apse, all this variety of curves like the recurring theme of a symphony, all followed as a corollary of the greater forms and become recalls that give color and value to them.

The arrangement of the Theba was the result of experience at the old Temple and led to the placing of the Ark in its present focal point. It only remained to beautify and give value to this Holy spot which is the supreme objective of the ensemble. The Ark which is of gilt bronze and cloissonee enamel suggested itself as being the most precious possible form. The canopy was designed to frame and shelter the Ark. The austerity of the surrounding walls and vaults depending on their form and proportion alone to give them beauty, serves as a contrasting foil to the splendors of the Ark itself. The same care was taken with the accessories, such as the Menora and the electric chandeliers, which were planned to contribute to the general scheme.

The great surfaces of the dome and vaults were a puzzling problem and one which perhaps may be restudied later on. For the present it was thought worth while to try the simplest possible treatment and depend on the pure form and the neutral color of the stained plaster to gain an adequate effect.

The design of the cloistered court, the fountain and the grandiose portal was made in the same spirit of a general harmony. The possibilities of the play of light and shade in the niche like portal framing the main entrance were eagerly studied, as there was here, evidently, a rare chance to make a truly powerful architectural effect. The court aside from its purely utilitarian merits, is an element which evokes souvenirs and has a romantic perfume, beside its traditional significance Solomon's Temple was preceded, so we are told, by a series of courts in one of which was a fountain serving in the ritual. The decoration of the column capitals was the result of the close study of an endless number of antique, Byzantine and Romanesque models and were designed to give what the artist calls the proper color and value to the various parts which they adorn. Another part which has a strikingly decorative quality is the vestibule or as it is traditionally called, the Narthex. This low vaulted gallery with its fresh blue color makes a sharp contrast—a frequent device of the designer—both with the sky-covered court without and with the old ivory tones of the lofty Temple within.

If, when the Temple house has been completed and furnished, the spirit of harmony and unity is found to be present throughout the fabric and down to its minute details and if, moreover, the noble forms of this lofty dome and the beauty of the cloistered court inspire those that enter here with emotions of peace and religious fervor, and lead them to lofty thoughts, then we will feel that our goal has been achieved.

* * * *

To Reconstruct Old Mission With Reinforced Concrete

THE old mission at Santa Barbara will soon be so reconstructed that it may be preserved for generations to come, yet no detail will be in any way altered. The reconstructed building, which is architecturally and historically well worth preserving, is to be so rejuvenated that it will preserve the same impression as the old, not only in color values and textures, but also in contour and age. The old eccentricities of the floors and walls, none of which are in either horizontal or vertical planes, have been carefully measured and will be retained in the renovated structure.

As planned by the architectural board, it is their intention to chase the walls of the lower story for reinforced concrete columns to be carried down to spread footings at a sufficient depth to carry the structure. These columns will support reinforced concrete girders and beams that will carry the concrete and tile floors. In the monastery section, all exterior and interior walls will be rebuilt of reinforced concrete. Stone walls are to be reconditioned with the cement gun, while all fissures are to be filled with grout and tied together with iron anchors and tie rods, and finally plastered to match the old work. The entire roof of the mission, with the exception of the larger timbers crossing the nave, will be removed, and rebuilt with the old timbers and structural steel—after a reinforced concrete plate has been cast at the top of the wall. The roof will then be recovered with the old tile. Both towers, which are about at the point of collapse, will be torn down and rebuilt with reinforced concrete and stone, with every original detail carefully restored. The old stairs will be preserved entire. Buttresses supporting the nave are to be brought back into alignment by means of anchors and reinforced concrete. Thus this adobe structure, built a century ago, may be made to live for centuries to come.—Concrete.

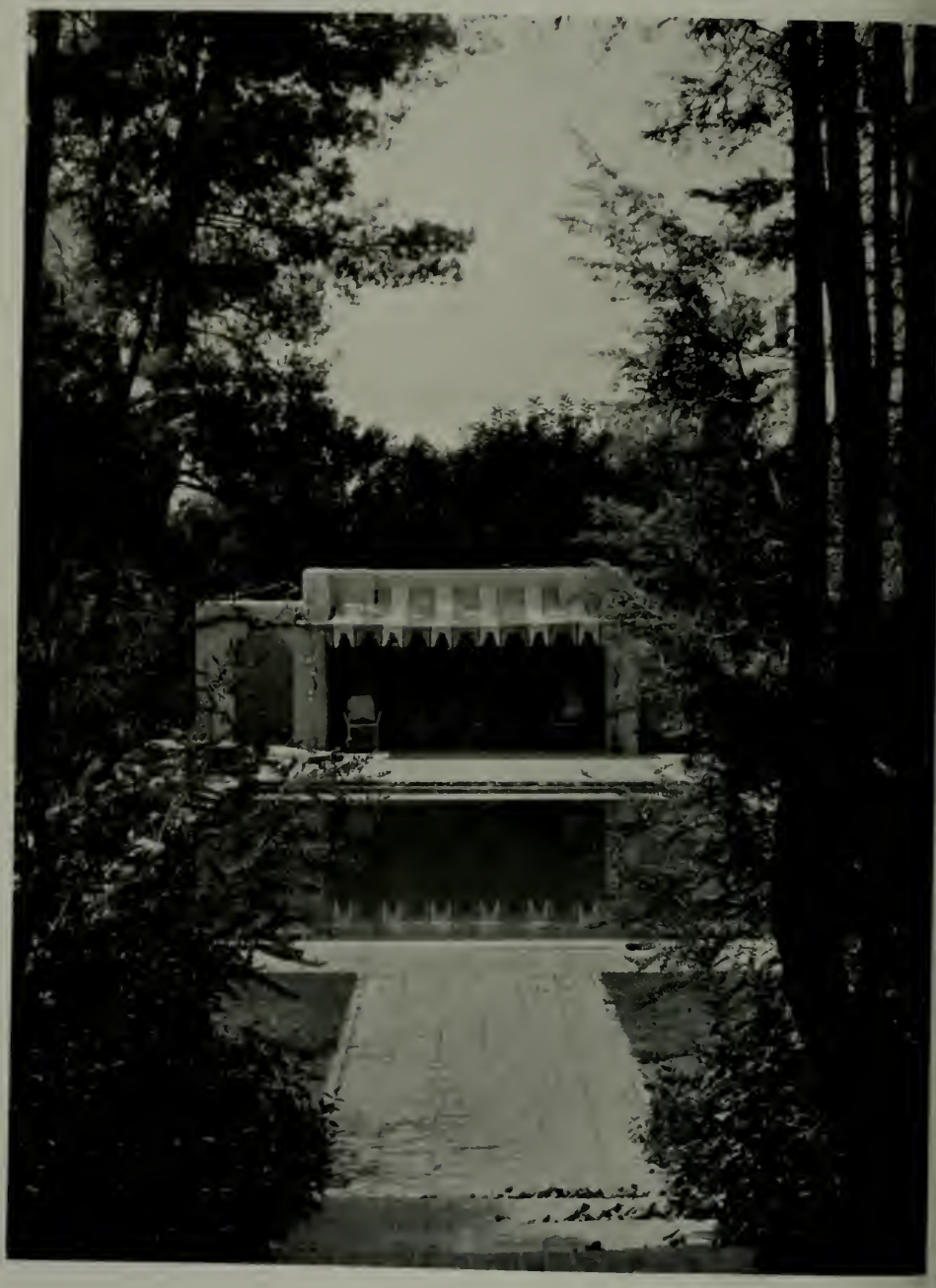
* * * *

Competition for Traffic Signal Towers

Two competitions, based on the widely recognized need for better design in street fixtures, are announced. The first calls for designs for traffic signal towers and street lighting standards. The second is for filling stations. In neither case is the electrical or mechanical equipment of the structure a part of the competition. These competitions are being conducted by the Biscayne Boulevard Association, Miami, Florida. The Association has appointed Messrs. Bennett, Parsons and Frost, consulting architects, Chicago, to serve as professional advisers. The competitions close October 1. The Biscayne Boulevard Association agrees to award to the winners within five days after the judgment of the jury $4650 in prizes as follows:

Competition No. 1—1st Prize $1000; 2nd $600; 3rd $400; 4th $200; 6 Mentions, each $75.

Competition No. 2—1st Prize $750; 2nd $400; 3rd $250; 4th $150; 6 Mentions, each $75. The program may be obtained by addressing Harry T. Frost, Biscayne Boulevard Association, Columbus Hotel, Biscayne Boulevard, Miami, Florida.



POOL, HOUSE OF W. S. MORSE, PASADENA
PAUL G. THIENE, LANDSCAPE ARCHITECT

HOUSE OF E. P. GAVIT, MONTECITO, CALIFORNIA
Paul G. Thiene, Landscape Architect

Third Annual Exhibit of Landscape Architecture and Garden Sculpture, Los Angeles

By MRS. E. L. BRUNER

"SIMILARITIES of climate, together with a much greater variety of plant material, give to the Mediterranean type of formal garden an extreme effectiveness in Southern California," was a statement made by Charles G. Adams, landscape architect, and chairman of the committee in charge of the Third Annual Exhibit of Landscape Architecture and Garden Sculpture held recently by the Pacific Coast Chapter of the American Society of Landscape Architects and the Sculptors' Guild of Southern California, at the Casa Adobe, Los Angeles. The Exhibit, in keeping with the modern development of the Spanish-Italian Renaissance in architecture, showed a decided preponderance of charming formalities of arrangement typical of old world Southern European gardens. Even the garden sculpture, with one or two exceptions, clung to the lines of classic purity rather than to ultra modern crudities of conception.

Mr. Adams went on to say that many other interesting and delightful landscape effects have been worked out in the southern part of California. The important thing is to conform to the type of architecture. An English house demands an English garden; a Spanish house demands a Spanish garden, and so on, always, of course, changed and modified

to fit the needs and customs of present day life. For instance, no actual Spanish garden ever boasted so much as a square foot of lawn; the garden hose and the sprinkler system are unknown in Spain. But a garden in California must have its lawn, which unquestionably adds greatly to the artistic possibilities of a Spanish garden.

The Casa Adobe itself, which has been taken over by the Southwest Museum as an exhibition place for relics of the period of the Spanish occupation, formed an interesting and appropriate setting for the showing of garden sculpture and for the photographs and drawings of the most recent developments in landscape architecture.

LA COLLINA, ESTATE OF B. R. MEYER, BEVERLY HILLS
Paul G. Thiene, Landscape Architect

The purpose of the exhibition, it was announced, was, first to acquaint the public with the possibilities of the California garden when handled by an expert, and second, to stimulate and encourage better landscape planning by members of the profession.

Among the many interesting features of the landscape exhibit were a group of vivid-colored sketches of the E. L. Doheny Jr. garden at Beverly Hills, done by Paul G. Thiene, a number of photographs of Villa Capistrano, the Silver Lake home of Julian Eltinge, and the Walter P. Story place, the gardens of which were planned by Charles G. Adams. The Palos Verde Estates, where much has been done in the way of achieving a unified architectural scheme, were shown in a series of

conspicuously lovely photographs of Spanish gardens planned by Olmstead Bros. Wm. Lee Woolett was responsible for two large pastel conceptions of the new Los Angeles Civic Center with its landscape surroundings.

Of outstanding interest in the sculptural exhibit were two guilded bronze tablets depicting groups of very lovely dancing figures in relief, by S. Cartaino Scarpitta, a life-size statue of "Galotea" in plaster by Roger Noble Burnham, and two small bronze figures, "The Appeal" and "Thanks to the God of Waters," also by Mr. Burnham. The Mer-baby, a large bronze fountain piece by Maud Daggett attracted a good deal of attention in the center of the patio, and many other charmingly interesting figures and designs in plaster and bronze were placed effectively at various points around the patio and in the adjoining rooms of the Casa Adobe, where, aside from the photographs and drawings of actual or proposed gardens in Southern California, there was also a most interesting collection of photographs taken in Italy and showing some of the better and most beautiful of the old Italian gardens.

The exhibitors in the landscape group were: Charles G. Adams, Cook & Hall, Ralph D. Cornell, Katherine Bashford, Stuart Chisholm, John Byers, W. A. Clarke, Helen Deusner, E. T. Mische, Stephen Child, Margaret Sears, Theodore Payne, Paul G. Thiene, J. T. Edwards Studio, Wm. Lee Woolett and Omstead Bros. The sculptural exhibitors were: Maud Daggett, F. Tolles Chamberlin, Caspar L. Gruenfeld, S. Cartaino Scarpitta, George Stanley, G. Merrill Gage, Roger N. Burnham, David Griesbach, Katherine Beecher Stetson, Julia Bracken Wendt, the Orro Studios, Grace Welles Parkinson, Maxine Albro, E. T. Bauman, Mabel Alvarez and the Gladding-McBean Pottery Co.

* * * *

Decorating the Hall

In the hall itself one gets the first impression of the decorative character of the house. It is the formal introduction to the more intimate rooms beyond. It should interest and invite, and by its simple dignity and charm of design or color should make one eager to see the rest of the house. Its treatment should be direct and bold and its furnishings spare but always with a keen appreciation of their value in completing or augmenting the dominant decorative idea of the whole. Nowhere should a table, chair or sofa be chosen with greater care for its relation to the space it will occupy than in the hall. The furniture in the hall should never be considered apart from its surroundings if one desires a restful, charming effect.

* * * *

Competition Requirements

Briefly, the American Institute of Architects has stipulated the following requirements for an architectural competition:

1. That the competition be in one of two forms approved by the Institute, either limited or open, and if of the latter type that it be held in two stages.

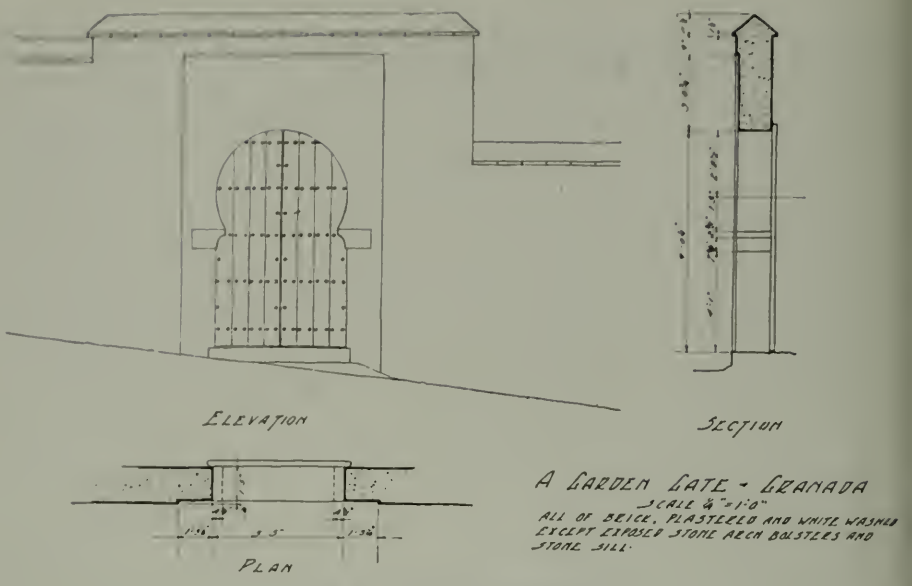
2. That there be a professional adviser.

3. That there be on the jury a practicing architect, preferably more than one.

4. That the program contain a contract for architect's services in accord with good practice.

MICHIGAN AVENUE, CHICAGO, WRIGLEY BUILDING ILLUMINATED
PHOTOGRAPH BY
S. OSATO

THE NEW CHICAGO, NORTH OF RIVER
PHOTOGRAPH BY S. OSATO


ELEVATION
SECTION
PLAN
A GARDEN GATE - GRANADA
SCALE ¼"=1'-0"
ALL OF BRICK, PLASTERED AND WHITE WASHED EXCEPT EXPOSED STONE ARCH BOLSTERS AND STONE SILL.

ROGER W. BLAINE, DELINEATOR

ROGER W. BLAINE, DELINEATOR

SKETCHES *in* SOUTHERN SPAIN

By ROGER W. BLAINE

GRANADA, ROGER W. BLAINE, DELINEATOR

Detail of House on the Albaicin - Granada.

On the Vega - Granada.

ROGER W. BLAINE, DELINEATOR

Granada.

ROGER W. BLAINE, DELINEATOR

Toledo

Toledo

TOLEDO, ROGER W. BLAINE, DELINEATOR

SANTA MARIA LA MAYOR
ROGER W. BLAINE, DEL.

THE GENERALIFE FROM ALTA ALHAMBRA
ROGER W. BLAINE. DELINEATOR

THE MOSQUE AT CORDOVA
ROGER W. BLAINE, DEL.

MARCHENA, ROGER W. BLAINE, DELINEATOR

COLONNADE, PENNSYLVANIA STATE BUILDING, SESQUI-CENTENNIAL EXPOSITION

Philadelphia Sesqui-Centennial Exposition

THE World War was so far-reaching in its effects that even building construction methods did not remain unaffected. New, speedy ways were devised to meet the exigencies arising at the time when more and more extensive quarters were needed for war workers in every department. The pressing need passed but the methods remained, to become immediately incorporated in the everyday routine of building operations.

Hence, when it came to building in ten months what is practically a good sized town, the group of structures, colossal, merely large, medium size and small, that compose the Sesqui-Centennial Exposition, opened in Philadelphia, May 31, what would have been regarded as impossible prior to the war, now stands as a record performance among a list of building operations of half a dozen years, that in former days would not have included more than half the number of items for a similar term.

The type of construction employed is steel skeleton framework on wood pile foundations and with roughened stucco walls laid in wood studding. The big municipal Stadium built within the grounds is an exception, being of concrete and designed to remain as a permanent memorial of the Sesqui-Centennial celebration of the birth of the nation. Pastel tints applied to wall surfaces of the buildings with clear blue and green trim and occasional glints of mauve and gold applied to the white

ALCOVE IN THE PENNSYLVANIA STATE BUILDING
SESQUI-CENTENNIAL EXPOSITION, PHILADELPHIA

sculptured effects, combine to make a unique ensemble—colorful and pleasing. The expansive wall spaces of the larger buildings are broken here and there by pavilions, towers and vestibuled entrances colored in the brilliant shades.

The symmetrical grouping of the buildings has been planned in conformation with the natural topography of the land at this part of the city, a low, flat 1000 acre threaded with waterways.

The huge twin structures facing west that are to the visitors' left after entering the exhibition grounds are the Palace of Liberal Arts and the Palace of Foreign, Civic, Agricultural and Fashion Displays. The first is 964 feet long by 392 feet at its greatest width and contains seven and three-quarters acres of exhibition space. The second, slightly larger, is 970 feet long by 460 feet wide, and contains eight and a half acres of space. The latter building was completed in 120 days at a cost of nearly a million dollars.

These buildings are 60 feet high from ground to roof, with two ornamental towers 95 feet high. An arcade 400 feet long with display windows similar to those facing west, forms the south facade of the second building. In the center of the arcade is a large Indian vestibule, so named because its ornamentation is inspired by the early art work of the aboriginal races of America. From the vestibule three arched doorways with grills lead into the long main aisle of the building.

In the western front of the first building a portico with six ornamental columns forms a vestibule leading by means of seven doorways to the main aisle of the building. A symbolical frieze 75 feet long surmounts the portico. The cost of this building was $950,000.

The towers are surmounted by artistically conceived beacons supported by figures and playing on long slender musical pipes. Below, the towers are pierced by grills, through which at night will gleam rays of multi-colored light.

Facing the twin palaces, stands the auditorium with seating capacity of 20,000, all on one floor, there being no balcony. It is designed to be the theatre of all large indoor gatherings held during the exposition, conventions, concerts, religious services and similar assemblages. The structure covers two and a half acres, has a total length of 448 feet and is 274 feet wide. The clear height under specially designed steel trusses is thirty feet, the total height from floor to roof is sixty feet. Approximately 6500 tons of structural steel was employed in construction.

The interior is divided into three sections by aisles, the center one of which has a clear space of 150 feet, unbroken by a single supporting column. The exterior in color and finish resembles the palaces opposite.

The entrance colonnade is designed to symbolize the formation of the thirteen original colonies into the United States of America. Five doorways lead to the grand foyer, 150 by 30 feet, with barrel-vaulted ceiling.

The stadium, built at a cost of $3,000,000, is of concrete construction and therefore will remain as a permanent structure when the time comes to raze the temporary exhibition buildings. The structure is a huge U-shaped amphi-theatre covering five acres.

Across the open end is thrown an architecturally treated enclosing wall which projects 300 feet from the seating stand, and through which

DELAWARE STATE BUILDING, SESQUI-CENTENNIAL EXPOSITION

PALACE LIBERAL ARTS AND MANUFACTURERS, SESQUI-CENTENNIAL EXPOSITION

MT. VERNON, SESQUI-CENTENNIAL EXPOSITION, PHILADELPHIA

TREASURE ISLAND, SESQUI-CENTENNIAL EXPOSITION, PHILADELPHIA

various gates and archways serve as exits or entrances to the field. This arrangement creates an arena 840 by 350 feet, containing football and baseball fields, a quarter mile track and ample room for the placing of two 220-yard straight-away sprint lanes. Both the start and the finish of these lanes are well within the confines of the stadium, and in full view of the spectators.

From the outside, the stadium appears as a long, arcaded brick wall trimmed with stone. Two towers mark the northern extremities. Thirty-nine entrances distributed regularly along the outside wall lead directly to the ramps and portals which open out to the seat deck midway between the top and bottom rows. The uppermost seats are 64 feet above the level of the playing field.

Thirty-eight arched openings are distributed regularly in the stadium wall as exits. The apertures are 18 by 28 feet, allowing ample space for general crowd exit and avoiding the annoyance of slow egress.

Inside the walls and lighted by the arched openings of the exterior arcade, is a vaulted promenade or corridor which is crossed in reaching the entrance to the portal ramps. This promenade is 40 feet wide and extends the full length of the structure, or along both sides and across the curved south end—a distance of over 1,800 feet—thus providing a sheltered, yet ample means of circulation for numbers of people between all parts of the structure.

Located along the inside of the promenade and opposite the entrance gates are space available for concessions. They are situated between the ramps leading to the seats and have a frontage of 35 feet and a depth of 40 feet for each.

The seating deck is entered through wide and ample portals, ten feet in width from the covered promenade. There are 77 rows of seats, the lower two of which are arranged as boxes throughout the entire perimeter of the stands. Three special boxes for officials or prominent guests occupy the central positions on each side and at the curved end, and project slightly from the inside face of the stadium.

The large building in which is displayed exhibits prepared by various divisions of the United States Government departments and also those relating to machinery, mines, metallurgy and transportation, and for convenience known as Palace No. 5, was completed June 15, a period of 75 days since construction began. It was erected at a cost of $850,000 from the appropriation made by the government. The building, 880 feet long by 400 feet wide, provides seven and one-half acres of exhibition space.

The two smaller palaces are devoted the one to Education and Social Economy and the other to Fine Arts, the former 524 feet by 208 feet, provides two and a half acres of exhibition space, and the latter, 496 feet by 260 feet, two acres of space.

Lesser structures to the number of forty or more, furnish individual architectural features, especially those of some of the Oriental nations whose colorful structures reflect buildings typical of the Far East.

* * * *

$200,000 Class A Theatre

Architects Reid Bros. of San Francisco are preparing plans for a $200,000 Class A theatre to seat 1600 persons for Klamath Falls, Oregon.

Ideas for Theatre Stages

This is the first of a series of four articles on The Modern Theatre Stage, prompted by a genuine need for a clean-cut explanation of the fundamental principles and requirements in school and theatre stage design. Technical mistakes are not infrequently found. Whether such mistakes are the fault of the architect himself, or are due to the palpable scarcity of comprehensive information on the subject, is a matter open for debate.

The author says that as a technical engineer, he is frequently forced to devise ways and means for surmounting obstacles which he thinks could have been avoided had the architect been properly advised in the beginning. It is hoped that these articles will help to eliminate unnecessary work in future designs at the same time improve the finished installation.

Specifications, too, the author declares, are often confusing, ambiguous, incomplete—and sometimes ridiculous. He says he has examined specifications whose only quality was that they conveyed an idea that scenery was wanted for the stage. But to a clever technical man he says they offered the widest latitude for substitutions, short-cuts and any kind of porch-climbing tactics. There is only one reason for specifications of this kind. Ignorance.—Editor.

By DARIEL FITZKEE

AS far as we are concerned the stage roughly groups itself into the following divisions: The stage floor, the proscenium, the gridiron and the fly-gallery.

The stage floor seems to be a simple enough matter, yet it is a constant source of trouble to the inexperienced designer. Its height from the auditorium floor—not the floor of the orchestra pit—should be three feet six inches to four feet two inches. Not an inch more nor an inch less.

To those who are not willing to believe this statement I have only to say that if they will go into the theatres where they have difficulty in seeing the proceedings on the front of the apron, or if they cannot see around the heads of the people in front of them whether they sit in the balcony or the main floor, they will usually find the trouble due to the height of the stage floor.

This rule has been evolved as the result of many experiments and much experience.

The stage floor should be absolutely clear from the front to the back and from side to side. The stage floor proper should have a minimum width of at least twice the width of the proscenium arch if possible, otherwise not less than the full width of the auditorium. If there is room to spare after that you may do as you please about dressing rooms and so on. But to get an absolutely efficient stage this rule of twice the proscenium arch much be adhered to. We'll return to this presently.

Flooring for the stage is commonly accepted as cedar—sometimes Oregon pine—except the apron of maple. This is perfectly all right, except that in large motion picture houses, legitimate theatres or vaudeville, the stage gets chewed up so much that it necessitates frequent flooring.

One prominent theatre manager, owner of a large chain of first-class houses, decided to defy tradition and try a stage floored with maple. The stage hands raised a horrible row. Nevertheless, he went ahead. Previously he had been reflooring this theatre on an average of every two years. That particular maple floor stayed in ten or fifteen years—in fact, until the house was torn down. Since then every theatre this man has built—and there have been many—has had a maple stage floor. Did you ever check the difference in price between maple and cedar? It isn't very much.

The only objection that can be raised against the maple is that the

wood is hard and therefore hard to sink stage pegs into. But it is the stage pegs and that sort of thing that wears the cedar out. As an answer to that objection let me cite this chain of theatres—ninety some odd, I understand—showing three and four shows a day. And they don't put on a show that there isn't a stage peg sunk in the floor somewhere.

Suppose we take up the proscenium arch just now. Lines of sight are obviously familiar to you. You know that at each corner nearest the stage there is a certain lost space in the auditorium, from which it is impossible to get a clear view of the entire stage. This of course, providing the stage end of the auditorium is straight. (See Fig. 1.)

Many architects put an oblique sounding board effect in these corners, sometimes in the floor plan like the hypotenuse of a right triangle, using the side wall and the projected flat proscenium arch wall—or where the wall would be if it were made straight—as the base and altitude. They start it about half-way back in the auditorium and run it almost to the proscenium opening. (See Fig. 2.)

This adds considerable back-stage space to the always insufficient amount available, without detracting in any way from the seating capacity of the auditorium. Acoustical advantages are claimed for it too, but I am inclined to think that these are negligible.

Now as to the height and width.

There is an item of equipment, called the tormentor and grand drapery which is usually placed about six feet behind the front curtain line. It serves the purpose of a false inner-proscenium. It may be a hinged wing, standing on either side of the stage, or a drapery. At any rate it is there, unless it is a very small stage.

The two wings are the "tormentors" and the border hanging above them is the "grand drapery." The height to which the grand drapery may be trimmed is obviously limited by the height of the tormentors. In the large moving picture theatres the height is probably most frequently limited to thirty feet. And in the regular legitimate or vaudeville theatres seldom goes over twenty feet—sometimes twenty-two.

In the case of the moving picture theatres the height is made necessary by the height of the rear picture screen, so that the picture will not be cut off from the top when viewed from the rear of the balcony. (See Fig. 3.) When this does not influence the height of the grand drapery there is no earthly reason for going higher than twenty feet.

However, having established the height of the grand drapery by laying out a line of sight plan, drawing a line from the top of the rear screen to the rear of the balcony. (See Fig. 3.) Or if a legitimate theatre, drawing a line from a point representing about eighteen feet up on the rear curtain. Having established this line of sight, this self-same line will establish the minimum lower edge of your proscenium arch, or valance. This line we might call the proscenium limit line. Upon it hinges some very important measurements.

If the proscenium arch is placed at this line, make the under-side of the gridiron five feet higher than TWICE this height. If the proscenium arch is made higher, it will be necessary to mask down to this point by means of a permanent valance. Or, if you don't want this valance to come this low, the only way out of it is to double the height

Fig 1

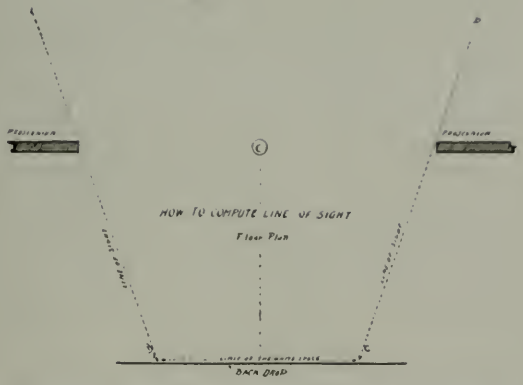


Fig. 2.

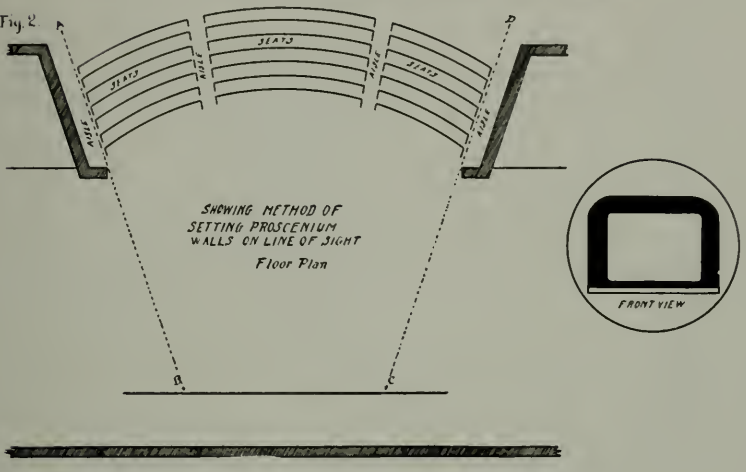
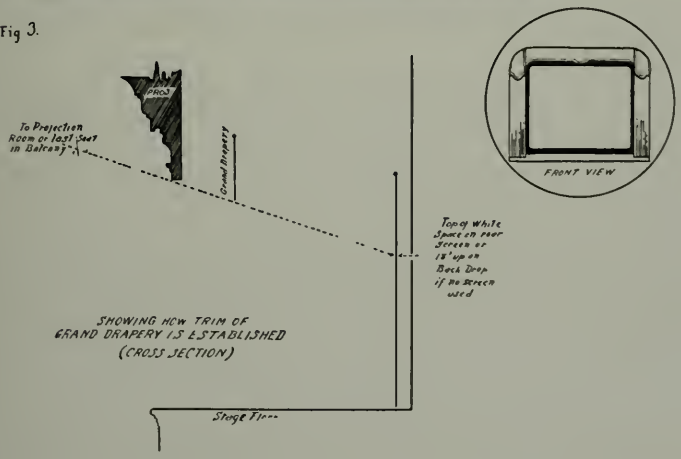
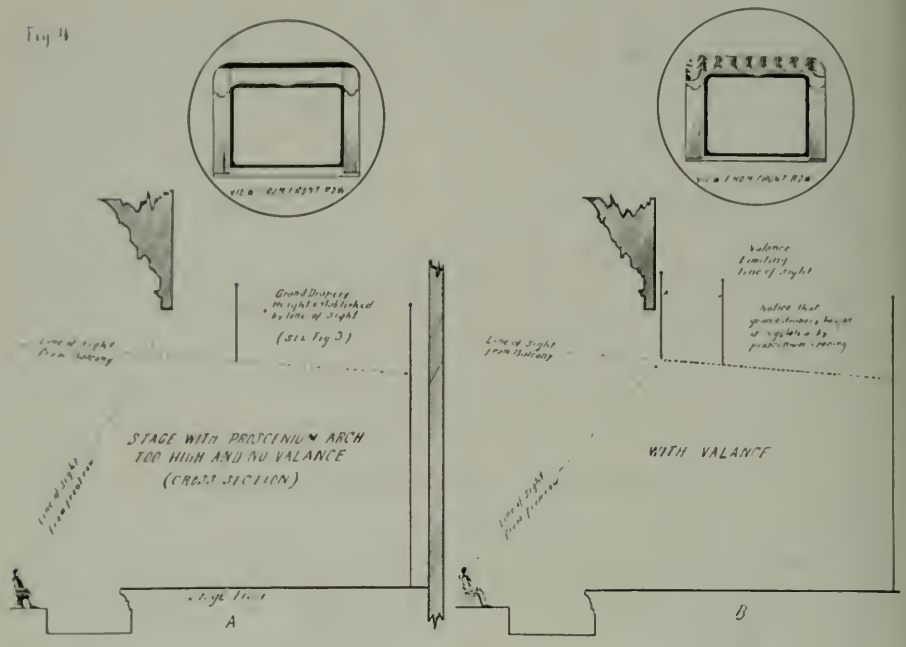


Fig 3.


To Projection Room or last seat in Balcony
Grand Drapery
Top of white Space on rear Screen or 18" up on Back Drop if No Screen used
SHOWING HOW TRIM OF
GRAND DRAPERY IS ESTABLISHED
(CROSS SECTION)
Stage Floor
FRONT VIEW



of the arch established, plus five feet for your gridiron, (Fig. 4). In other words, what ultimately limits the sight within the proscenium arch —either valance or arch itself—is your basis for computing the gridiron height. The rule of twice plus five holds true in all cases.

Remember this, though, that every inch you go over the height of the proscenium limit line referred to above adds that much more to the depth of the grand drapery border. As it absolutely MUST mask.

Now to explain this twice plus five rule: A drop to close this opening must naturally be a little wider and a little higher than the opening for masking purposes. Therefore, there must be an equivalent height to accommodate this drop when it is raised. You have already added a little height to lap past the top—this is usually 18 inches. So that already takes one and one-half feet more, and we need all of the remaining three and one-half feet for mechanical reasons—perhaps it might be necessary to put a bridle on this drop to overcome sags. (Fig. 5.)

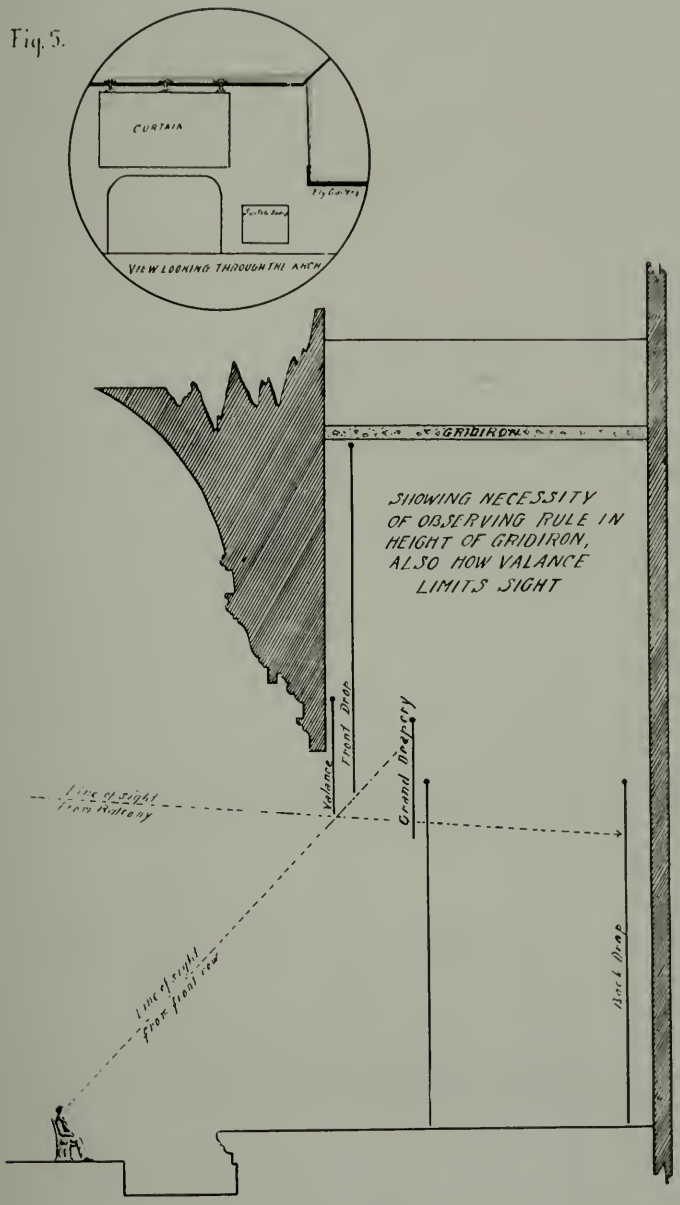
The error of not providing sufficient height behind the arch—I am speaking now of the actual opening whether limited by the valance or arch proper—is not an uncommon one. If this height is not provided, the only solution for us is to put in a valance, thereby cutting down the proscenium height, to overcome the difficulty. But valances of this character are unsightly things usually. And, as is quite frequent in high schools of certain design, they are utterly ridiculous on an arch sixteen feet high—I speak of this height because I encounter it frequently.

The wall to wall measurement behind the arch is another important point.

Too many theatres are built nowadays without allowing sufficient room offstage. Some stages, otherwise perfect, are practically ruined by dressing rooms or pipe organs put into space which should be devoted to mechanical handling and stage operation.

Let's go back-stage while a show is being worked:

Fig. 5.



This may be seen in almost any theatre. Over here is a piano, which will be used in a subsequent scene. It must be on the stage now, so that it is easily available. Back in the corner is a large pile of flat framed pieces, attached against the wall. This pile is probably three to six feet thick, six feet wide and sixteen feet high. Here is a large

Fig 6

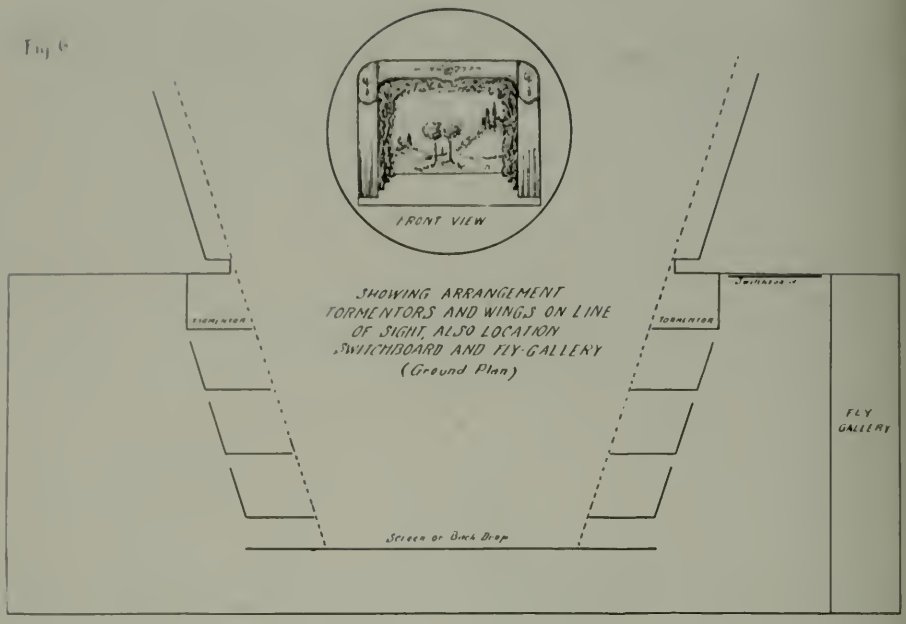
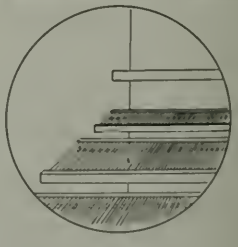


Fig. 7

GRID IRON
DETAIL



stand lamp. Leaning against the back wall are several sections of steps. Settees, chairs, rugs, books, mantles, clocks, tables, scarfs—a hundred objects—grouped and pile and tossed—and all, and more, are awaiting their turn to be used.

There are actors and actresses, flood lights and spot-lights, lengths of cable. People—people everywhere. Harassed members of the stage crew drag objects around. People are in their way. An electrician is standing at the switchboard, hand on lever—and he swears. His gaze is fixed intently on the man on stage who is walking towards the switch plainly showing on the stage setting. The electrician's job is to put out the lights when the actor touches the switch. But someone, because there is no place else to stand, is directly between his eye and the switch. How will he gauge the right moment?

How on earth are they going to strike the scene being used now and set up another? Hah! Now you begin to realize what it means to cramp this space.

Yet we haven't pointed out the pinrail. You haven't seen the plugging boxes on the floor which must be kept clear. Neither have we shown you that there is much more room taken up by the scenes on the stage than appears from the front, (Fig. 6).

Perhaps you think that this confusion and congestion holds true only in certain types of houses. Let me here solemnly assure you that in every theatre which shows anything—except solely motion pictures—and when I say solely I mean they do not even have a singer. Let me assure you solemnly that in every theatre in the land, to a greater or lesser degree, prevails this self-same scene. I have seen it on Broadway, on Randolph street in Chicago, in Dallas, in Los Angeles.

The gridiron itself is probably the most technical part of the whole stage design.

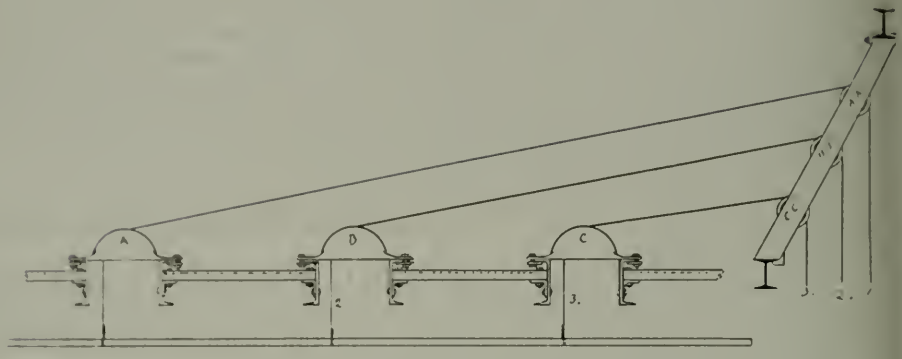
This member may be constructed of wood or steel—depending on circumstances and ordinances. It consists of a number of beams, running in pairs from the proscenium wall to the back stage wall. (Fig. 7.) Each pair of beams supports each end of a loft block—I mean the beams directly above the space within the proscenium opening. (Fig. 8.) These pairs of beams make the slots through which the rope runs and between each pair of beams are slats spaced on 6-inch centers running from side to side. The headblock well, usually on the right side as you face the audience, is specially designed.

A set of lines consists of three or four loft blocks with a three or four-sheave lead or headblock. (Fig. 8.) The loft block consists of a single sheave between wood or metal housings. The headblock is a set of three or four sheaves—depending upon the number of loft blocks used—with the sheaves mounted one above the other. The lead block serves the same purpose as the headblock except that the sheaves are mounted parallel. The headblock is usually preferred because it takes up much less space.

Refer to the drawing. This shows a three-line set. Line I comes through the loft block well over block A thence over sheave AA in head block D. From the head block it goes to the pin rail. Since each line in the set has a separate set of sheaves it may be seen that each may be separately controlled. This makes it possible to trim.

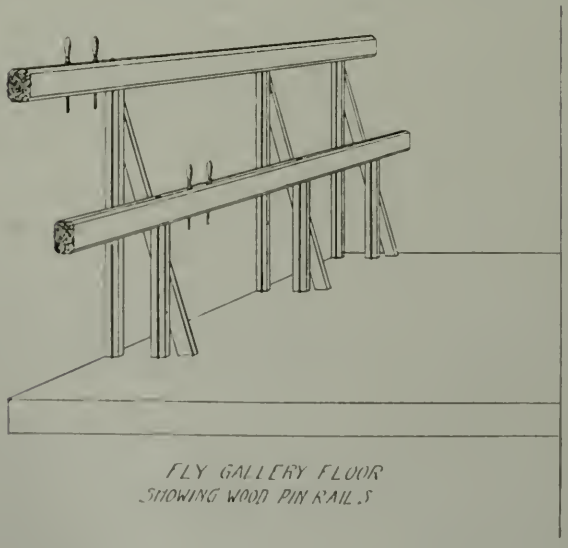
Now the maximum span between each line is fifteen feet, therefore a three-line set will support drops 36 to 38 feet long. It is possible to support longer drops by means of bridles. A bridle I might explain,

Fig 8



DETAIL SHOWING LINE SET
ARRANGEMENT

Fig 9



FLY GALLERY FLOOR
SHOWING WOOD PIN RAILS

is made by securing a light cable on the batten each end equi-distant from the spot where the line would be otherwise secured. This makes a sort of inverted V, to the peak of which is secured the line itself. However, where the proscenium arch is in the neighborhood of fifty feet, a four-line set is best.

To get the proper spacing of the beams to support the loft block secure a Clancy catalogue from any of the authorized agents—the Flagg Scenic Corporation can furnish this. Pick out the loft block you want to use, and under the section dealing with the measurements of the block, find out the maximum distance that particular block will span. This, then, regulates the placing of the loft block beams.

Decide upon either a head or lead block and proceed as before, except that in the case of the head block do not overlook the beam to support the top. (Fig. 8.)

Having established these beams your next move is to put in the slats between them. Leave the space where the rope drops to the stage open. (Fig. 7.) But put the slats, running them from side to side, between each well, spacing them on about six inch centers.

It is not an uncommon thing for us to find slats running from front to back. But aside from their use as a floor, they defeat their very purpose of strength. These slats are put in to overcome the tremendous transverse strain—the squeezing strain—between the pulleys, from the head block to the furthest loft block. There is your greatest strain on the gridiron. Besides they make running lines much easier.

Never make the mistake of eliminating these slats, as that makes the original installation difficult, precludes inspection and makes it impossible to run special sets of lines. Being mechanical, the blocks must be oiled and inspected, as well as ropes and cables. Otherwise there is danger of accident ultimately.

I shall have something further to say about the gridiron in a subsequent article on equipment.

The next step is the fly-gallery. This serves as a vantage point from which to operate the lines, and at the same time gets the pin rail off of the congested stage.

Years ago it became the custom for stage directors to take a position on the right of the proscenium arch as you face the audience. Because of this it became the custom to place the switchboard on the same side, so that the director could control its manipulation. It is easy to see the impracticability of having the electrician and director on opposite sides.

For this self-same reason it is necessary to have every control on the same side of the stage—the asbestos curtain, the switchboard, the fly-gallery and the endless line system. Whether it is on the right or left side is not so important—except from the angle of standardization. But it is imperative to have them all on the same side. Do not neglect this! This is the most iron-clad rule I have given you.

It should never be higher than half the distance to the gridiron—less five feet. Under no circumstances should it be closer to the stage floor than nineteen feet. Twenty-four feet is a good height.

The reason for the nineteen feet limit is that sixteen foot pieces are stacked beneath it, and handled. If you have ever seen built scenery handled by the stage crew you will understand why the three-foot clearance is necessary.

Make the gallery four to six feet wide, but never put it closer to the proscenium arch than ten feet. There are many reasons for this.

If you put in a wooden pin rail, make it out of a four by six piece of Oregon pine. (Fig. 9.) Cut the corners off of the edges, making it octagonal on the ends. Stand it on edge at a height of three feet six inches to the under side. This height is for convenience in handling lines and in trimming drops. Sink the rail into both walls two or three inches and bolt it to the fly-gallery floor about every six or seven feet with a three-quarter inch rod. You may use two-by-fours edgewise for legs. Holes one and one-eighth inches in diameter should be bored on eight-inch centers all along the rail. The rail should be put flush with the onstage edge of the gallery, so the operator may watch the drops as he handles them.

If two pin-rails are used place the second rail ten inches inside of the first rail. The second rail should be two feet from the gallery floor, and the belaying pin holes should be staggered with those on the top rail.

We have already said that the switchboard should be on the same side of the stage as the fly-gallery—preferably right if the structural conditions permit. But be careful that you do not place the switchboard too close to the proscenium arch. True, the switchboard must be placed in such a position that the operator may watch proceedings on stage. But the endless line, controlling the asbestos curtain comes between the arch and the switchboard. Also, there must be some off-stage room for the tormentors. If tormentors aren't used—as in certain types of motion picture houses—see that you have room enough between the arch and the switchboard to permit the front curtain to completely clear the proscenium arch when drawn off.

This placing of the switchboard too close to the arch is not an uncommon fault. I can take you to a number of theatres—otherwise perfect—with this fault. One theatre comes to my mind where the front curtain hangs onstage within the arch at least two feet, and seriously interferes with the line of sight. This is certainly not faultless design. Whether or not this particular architect has corrected this on his subsequent theatres I do not know. I almost hesitate to call faults like this to an architect's attention because many of them are super-sensitive to criticism.

It is startling to realize how conceited some of you chaps become with success. Only the other day I had occasion to call upon one of the most prominent architects on the Pacific Coast—in fact he is nationally known. I volunteered my services in connection with a project he is now designing, for such technical advice as he might find of value. He assured me that he was an old theatrical architect and that I could not possibly have any suggestions to make that would improve his work. He was even impolite enough to let me understand that he considered my call an intrusion.

The part of the whole thing that amused me at the time—and it does yet—is this: What prompted me to call on him was that I had viewed a school stage of his design a few days previously, and had noted several glaring faults which I had hoped to tactfully correct. The faults were of a nature that made it quite plain to me that this architect needed some practical advice on the elements of stage installation. He palpably knew little of actual value.

Among things which I noted on his school job were: The switchboard and fly-gallery were on opposite sides of the stage. The gridiron was in but there were no slots for the lines. There was no provision for beams to support the loft blocks. No provision had been made for head or lead blocks. It would take a Philadelphia lawyer to install the asbestos curtain. And his lines of sight were positively criminal. The off-stage room was totally inadequate. There were numerous other faults—but I can't spare space here to discuss them.

And I had hoped to eliminate these mistakes on subsequent jobs!

A final point and I shall be finished. Beware of dressing rooms on the stage unless there is an unusual amount of space!

Summing things up: Any of these rules are merely approximate. I have attempted to show you reasons—these are important. If structural conditions forbid the literal adoption of these rules, vary them to suit. But above all else retain the reasons set forth here, and keep to the spirit of them.

Some of them cannot be overlooked. All controls must be on the same side. Provision must be made for the equipment on the gridiron. The stage level is imperative. Certainly the gridiron height must be intelligently determined. I haven't said the fly-gallery was absolutely necessary under all conditions. In many circumstances I would not advise it at all—schools particularly.

I'll have more to say on this later.

* * * *

San Juan Bridge Shows High Strength Concrete

MORE than fifty samples of concrete taken during the construction of the San Juan bridge on the Los Angeles-San Diego highway, in Orange County, after test at the California Highway Commission's headquarters laboratory, show average strengths at twenty-eight days of 2890 pounds for Class C (mass concrete in piers) and 3900 pounds for Class A concrete going into other parts of the bridge.

These are some of the interesting facts concerning this project contained in a report of A. J. Meehan, resident engineer for the Commission's bridge department. The bridge is not the first to span San Juan Creek at the present site, two predecessors having been washed away by sudden floods which sometimes occur in the locality. The present heavy reinforced concrete structure replaces a temporary wooden bridge erected several years ago following a flood.

Because of past experience with the stream unusual precautions were taken in building the new bridge. The channel was enlarged fifty feet by removal of restricting roadway fills, slope paving was placed along both banks and bases of channel piers were extended fourteen feet below the bed of the stream and founded upon timber piles thirty feet long. The bridge terminals are each supported by a reinforced concrete beam capping four thirty-foot reinforced concrete piles.

The total length of the bridge is 180 feet. The three channel spans are each forty-six feet in length as compared with eleven feet in the old bridge. The greater length was provided to enlarge the waterway, which was further enlarged by an increase of more than a foot in the under clearance. The end spans are each twenty-one feet in length and the clear roadway width thirty feet.

Parts of former bridges which had to be removed while excavating for pier foundations caused the contractor considerable annoyance and delay. Blasting was necessary and water jets had to be used to facilitate driving of piles.

Abrams fineness modulus theory of concrete proportioning was applied throughout construction. Over fifty samples of concrete were taken and the range of laboratory results are tabulated below.

When comparing these tests with others, consideration should be given the following items:

1. Except in mass sections of structures, the use of rock larger than 1½ inch is prohibited by physical conditions whereas its use as in pavements, contributes to strength.

2. Low cement content in Class "C" concrete.

3. More water is required in bridge concrete than paving because of form and reinforcing restrictions.

4. Absence of machine tamper on this contract required more water in the pavement mixture.

Class Concrete	Sacks cement per cu. yd.	Slump average	28-day high	Strength low	(Lbs. sq. in.) average
"A" Bridge	6	3"	5740	2900	3900
"A" Slope paving	6	1⅞"	4910	3830	4490
"A" Paving	7	1⅝"	5290	3970	4710
"C" Bridge	4.2	1¾"	4050	1860	2890

* * * *

Least Vacancy in Moderate-Priced Apartments

APARTMENTS renting from $76 to $100 a month are the most popular with the renting public, according to a vacancy survey for April. While the vacancy figure for the $76 to $100 a month apartments is decreasing an increase in all other classifications was noted with the result that the average vacancy is 15.6 per cent.

Figures in one Western city for March and April of 1925 and 1926 are quoted below from the National Association Bulletin:

1926

Vacancy	Under $50	$51-$75	$76-$100	Over $100	Average
April	19.0	14.5	2.6	7.8	15.6
March	16.8	10.2	4.1	7.1	12.8

1925

Vacancy	Under $50	$51-$75	$76-$100	Over $100	Average
April	10.1	12.2	5.4	4.0	10.6
March	7.4	12.8	5.6	7.2	9.6

* * * *

Here Is A Gem

"If there is anything shown on the plans and not described in these specifications it is to be done as though shown and described."

That is the choice morsel which a member of the Associated General Contractors of America recently found in a set of specifications for a job on which he was trying to make a bid.

Interesting Report of Recent A. I. A. Convention at Washington, D. C.

By CARL F. GOULD, J. LISTER HOLMES and
HERBERT A. BLOGG of Seattle

THE impression in the convention prevailed that the national organization, though having a membership of less than one-third of the total number of practicing architects of the country, is accomplishing great things. On the other hand, and this does not apply to the active Washington State Chapter, the local divisions could develop their activities.

Outstanding results in the convention were, briefly: anxiety for an increased desirable membership; the raising of the dues from $20.00 to $25.00 (your delegates, as requested, voted against this); announcement of an addition of $10,000.00 to the Waid Educational Fund by its founder, President Waid, and $6000.00 added to the Octagon Property Fund by the same generous donor; efforts to reserve Lafayette Square for government buildings; competition code condensed and one and one-half pages eliminated for easier understanding of laymen; a year's study recommended for revision of the Code of Ethics; Committee on Public Information through the raising of dues will probably be allowed full appropriation of $6000.00 instead of $2000.00, and elimination of the criticism of the Scientific Research Department by the A. I. A. Press in the formation of an alliance of the Journal and the Producers Research Council, whereby the council gives the Journal $30,000.00 a year for publicity of their work.

Your delegates with those of other Pacific Coast States offered the following resolution:

To The President and Directors
Of The American Institute of Architects
In Convention Assembled, May 6, 1926:

WHEREAS: The recent visit of the Board of Directors of the American Institute of Architects to the Pacific Coast Chapters established a new and desirable "contactual" relationship with each member of the Chapters, and thereby was produced a better understanding of the problems both of these Chapters and of the Institute, therefore be it

RESOLVED, That we, the assembled delegates from the four Pacific Coast Chapters of the American Institute of Architects, express our sincere appreciation to each of the visiting members of the Board of Directors and their wives for the time and effort of each in accomplishing a better and more sympathetic understanding, and, that we furthermore urge a repetition, by the new Board, of a visit during their term of office.

WASHINGTON STATE CHAPTER.
OREGON STATE CHAPTER.
SAN FRANCISCO CHAPTER.
SOUTHERN CALIFORNIA CHAPTER.

Passing out from the Washington hotel, crowded with orange and blue badged delegates and alternates, on the morning of June 5th into the brilliant sunlight outside with the Washington monument against the intensely blue sky on the left, the somber grey of the Treasury building directly in front and crossing the crowded street intersections into Lafayette Square, through which we briskly wended our way, was an exhilarating experience after the long and dusty traveling days just behind us. Diagonally across the Square could be seen, through the flowering Judas trees, the many columned National Chamber of Commerce building, our objective. On either side of the path mulattos lounged upon park benches. On entering the impressive and somewhat

austere doorway and crossing the vestibule into the finely proportioned interior court we pushed aside some great curtains keeping out the direct sunlight and entered the immense assembly hall where the delegates were already finding their seats. A hall surprisingly distinguished in its great height and size and at once registering on our minds a vivid colorful impression. Banners brilliantly decorated with the coat of arms of noted discoverers projected at right angles from the walls. Upon either end of the room were hangings designed and fabricated by Monroe Hewlitt in a splendid Spanish fashion and across the ceiling stretched huge beams with plenty of movement and interest in their design to keep the eyes of the delegates at times wandering away from the speaker should he grow wearisome.

Even before the gavel in the hands of President Waid signaled the opening of the convention announcement was made urging delegates to interview their senators at the very first opportunity in order that the Washington plan might be preserved, as a bill allocating $50,000,000 worth of buildings was at that time pending before Congress regarding the physical features of the Capitol city.

The discussion which took place upon the Octagon building, for which there seems to be an ever-increasing attachment, occupied considerable time and the proposed improvement was explained fully, one entire evening, by an illustrated talk given by President Waid himself, the outcome of which was that the board was authorized to proceed with the construction of a building on the Octagon property to contain an assembly hall, exhibition room and library. This to be accomplished not by altering in any way the present Octagon house, but by adding in the rear a unit replacing the dilapidated stable in such a form as to bring it into a charming and harmonious relation to the existing building. Hereafter we are to meet in our own quarters during convention time, where the feeling of being in our own home should bring to the delegates a greater sense of intimacy, a quality which is perhaps now lacking when we meet in the halls of other organizations, as we have done in the past. In this way also members attending the convention will become acquainted with the charming Octagon house. At present it might be said that many delegates going to Washington have not found out where the Octagon house is and know it only by hearsay. This will also bring the Institute into closer relation with many organizations, for our assembly hall will be available for their use when we ourselves do not need it.

The second constructive enterprise authorized was a recommendation made by the Scientific Research Bureau that the Journal take on in addition to its present function, the editing of standard advertising materials for which $30,000 would be made available annually by advertising firms for this purpose. It was vaguely rumored that this report would come in for various opposition. However, when the report was offered not a single voice was raised in protest.

This, however, was not true of the Small House Service Bureau report which when made called forth bitter denunciations from New Jersey and from some of the Southern Chapters such as Florida. In spite of these protests the convention showed no disposition to relinquish their endorsement of the control over the Small House Service Bureau, reaffirming their endorsement by a large majority vote.

Much animated discussion took place on the propriety of architects forming what is known as The Allied Architects Association, but as the

discussion developed no one seemed to be able to define just where an association of one, two or three firms differed from the association of three or more firms, and although the allied architects association idea seemed to come in for unfavorable comment there were nevertheless no convincing arguments developed against it.

During the afternoon of the second day, when the delegates had become hot and sticky and anxious to get a chance to visit the city, a report of the Education Committee, Mr. Nimmons, chairman, stimulated the beginning of what promised to be one of the most vital and interesting discussions of the convention. A resolution was offered immediately after this report by the chairman that the teaching of the so-called new art as appearing in so many art schools and architectural departments should not be allowed. Immediately one-half a dozen men were on their feet and before the discussion had had time to develop, someone offered a resolution that the matter be tabled. It took the convention unawares and to the keen disappointment of your delegates the resolution was passed, preventing further discussion.

Although the convention quite lacked in final analysis stimulating and spontaneous ideas, nevertheless we feel that many constructive measures which have been pending for several years passed from the nebulous stage upon the road to actual accomplishment.

The three meetings per day during the convention kept your delegates very busy, but most of them managed somehow to visit several points of interest. One of them, making his first visit to an Institute Convention, with Arthur Holden, of New York, was privileged to visit several notable buildings. It is hard to say which impressed him most, for they all have a deep appeal, but he was inclined to favor the Lincoln Memorial. It is most impressive to stand directly in front of the statue of Lincoln, look along the Mall to the Washington monument and note how the great dome of the Capitol building is completely hidden by the towering shaft of the Washington monument. The three structures are so perfectly on axis that one could not find the Capitol if there were not lanterns on the two minor domes. Then to turn and look upon the colossal features of Lincoln. His gaze seems fixed on the great beyond, far, far beyond our ken. The face, especially in profile, is in deep repose and seems to convey to the onlooker a feeling of hope and stability for the nation.

The great value of the convention was not in its deliberations, though they were interesting and valuable, but in the broadening influence of travel, the meeting with men of many minds and varied accomplishments and in the renewing of old friendships.

* * * *

Del Monte Hotel and Country Club Number

The completion of the new Hotel Del Monte and the Peninsula Country Club building at Pebble Beach, has made possible some remarkably fine material for a number of The Architect and Engineer. Photographs and plans of the two buildings will be shown in detail in the October issue, together with pictures of some of the more interesting homes lately finished at Pebble Beach.

FINANCIAL CENTER BUILDING, SAN FRANCISCO, CALIFORNIA
FRED'K H. MEYER AND ALBIN JOHNSON, ARCHITECTS

The Coming of the Glass Skyscraper

By WILLIAM O. LUDLOW, Architect*

From an interview in the New York Times

NOW that our streets are turned into canyons and our cities piled up to extraordinary altitudes, light has become more of a problem than ever. Industry and business have always demanded more light to promote efficiency; but light has a broader significance than its application to work. The city skyscraper has extended itself to include the dwelling as well as business offices and small manufactories; and light is a fundamental need to human health and well-being.

One of my acquaintances is the director of a famous sanitarium and I noticed that he made a practice of wearing white clothing in all seasons. The color was always white whatever the thickness of the cloth from which his garments were made. I asked him the reason for this. He said: "Suppose you have in your house a window with a dark and a light shade. Pull down the dark shade and note the effect; then pull down the white shade and see the difference. I wear white clothes to let more light reach the skin, because light has a distinctly beneficial effect on the human skin." My friend had tested his theory in various ways. One, I saw, was by noting the growth of flowers under different colored glass.

There has never been a question about the therapeutic value of light, even without the sun rays; but it is true that our horizons have been extended in this matter. Architects see new possibilities in light, and particularly in its transmission through materials, never before realized.

There is the aesthetic opportunity offered by building with glass. Here a new world opens up to us. There is no doubt in my mind that when we have properly solved the designer's problem of using glass walls with steel construction we shall be able to build structures of utmost beauty. A thing is beautiful often if it is simply logical. The first step is fully to accept the new building logic that follows from the employment of steel. We must accept the steel skeleton, without masks of any kind. Hitherto we have used small units of brick or terra cotta to cover up the framework and make it look solid; but these small units or opaque curtain walls are only a convention, a hangover from the days when the wall supported the weight of the building.

With the coming of the glass building the steel framework will be completely expressed in the exterior design.

Buildings in which glass is freely used have not, of course, been entirely unknown. Stanford White first introduced the grill-and-glass lighting for banks in the Knickerbocker Trust Co. famous in its day, but now completely transformed. The Rodin Studios on Fifty-seventh street, designed by Cass Gilbert, present a north wall almost entirely of glass. The transition from these tentative efforts to the glass skyscraper building is really a step in "the evolution of the window."

In the heavy masonry construction of fifty years ago the window was a mere slit, and each window was an individual factor in the looks of the building. With the coming of the skyscraper, windows increased

EDITOR'S NOTE—In projecting the extravagant future of the House of Light, it must not be thought that Mr Ludlow is an impractical visionary. He is, on the contrary, a man of business and wide practical experience. He has seen and tested and worked with the materials of which he speaks through his whole career. But he is a builder of imagination and pays these materials the deserved tribute of being miraculous servants. He is the type of modern architect—and there are many like him—whose simplest speech seems fantastic to the uninitiated who perhaps cannot themselves quite grasp the human possibility of accomplishments that, on the practical side, appear perfectly reasonable to an architect's mind, seasoned by dizzy speculation.

in size, yet they lost their individual importance and were merged into whole columns of windows, vertical shafts that become units in the facade. The next step to be taken is the one we are discussing: the enlargement of the window from an opening in the wall to the wall itself.

The details remain to be worked out. The proportion of steel frame to glass, the shape of the glass units, the design of the mullions, the use of different types of fireproofing over the steel, the method of opening and closing the windows, the character of the glass itself and the combination of glass walls with terraces — all these and many other questions would, from the architect's standpoint, enter into the fascinating problem.

Of course, the growth of the glass building will depend upon the improvement in the quality of glass itself, and the discovery of new kinds of glass. Great progress is being made in this direction. I happen to know that there is at present being perfected a kind of glass that will permit the ultraviolet rays of the sun to pass through. It may be news to many people that these rays are stopped by ordinary window glass. They are highly beneficial and important to health.

One great advantage of glass, even the glass we have now, is that it is completely impervious to air—which cannot be said of any of the opaque building materials from which we make walls. We may be able to manufacture glass that is also impervious to the heat of summer and the cold of winter, but in any event, I see no reason why we should not employ the thermos principle in our buildings—vacuum spaces between double layers of glass walls. This would bring incalculable results in comfort and economy.

Finally there is colored glass to be considered, and the various kinds of movable shades to be used, giving almost unlimited variety of interior effects both in color and light. As our buildings are now constituted, with fixed small areas of window glass admitting a limited amount of colorless daylight, we must depend entirely on our painted interiors for color, reflected color only. The possibilities of transmitted color, of colored rays direct from the sky, skillfully controlled by shades, are enough to make a stage designer's imagination run riot.

And do not forget the wonderful views that will be possible in a city of terraces and pyramids such as New York is rapidly becoming. Views that will no longer be a picture framed by a little square, but a sweeping panorama in every direction.

* * * *

Relative Wear of Floorings

Experimental work at the Mellon Institute of Industrial Research, Pittsburgh, Pennsylvania, instituted by tile manufacturers, has resulted in some comparative data on wood and other flooring materials which should be of much interest to builders and householders. A curious result was the disclosure that marble and maple have about the same degree of resistance to abrasion.

Following is a list of the materials tested and the amount of wear under the test:

MATERIAL	Average Per Cent Loss	MATERIAL	Average Per Cent Loss
Vitreous tile	4.57	Oxychloride cement	50.10
Marble	23.18	Neat Portland cement	16.79
Maple wood	23.79	Asphaltic composition	80.11
Rubber	20.59	Cork tile	45.93
Linoleum	56.57		

Advantages of Better Plastering for Apartment Buildings

By FREDERICK JENNINGS

A THOUGHT which will be given much consideration in the next few years is that pertaining to the means by which resale value of apartments, buildings and homes can be maintained. True, here are sporadic instances where builders have given thought to this roblem, but the turnover of improved property has been so rapid that he need for upkeep has not often asserted itself forcibly. In other ords, the general thought has been that if a man ordered an apart- ent house constructed, he must sell it quickly before any question rose as to whether its condition affected its resale value. Thus, the lumbing fixtures, the lighting fixtures, the wall decorations and other ems subject to upkeep would be practically new when resold and it ould not be necessary for the builder to study this problem to any xtent.

Conditions in the realty field today have operated to alter conditions onsiderably. No longer is the building judged only by its outward ppearance. Among the accoutrements of the well-appointed apartment hich have done much to affect resale value of this type of structure s plumbing. The development of the buyer's interest has resulted in demand for plumbing fixtures of the type which a few years past ere used only in the very highest type of residential construction. he renter in the modern apartment demands the very best in bathroom quipment and one of the first things he notes, especially in older build- ngs, is the quality of the plumbing.

Lighting fixtures also catch the eye quickly. A few years ago large nverted bowls for either direct or semi-direct lighting were then con- idered the last work in illumination. Now these have been largely eplaced by wall brackets occasionally supplemented by ornate cande- abra, and individual floor and table lamps. For these the public has een educated to look for numerous convenience outlets, also necessary or electric housecleaning devices. The "period" of the house is thus often determined by a glance at the type of lighting equipment provided.

The style of wood trim used also denotes the generation in which he building was built. Twenty years ago the most intricate moldings were used around windows and door openings and for picture molding. Passé now are the old time familiar plate rails with which every dining room was adorned.

But even ancient plumbing and lighting fixtures might be over- looked if kept in good shape although often replaced by those of present- day design. This, it has been quite feasible to do on account of the relative ease by which such modernization could be affected. Not so, however, with cracked and discolored plaster on walls and ceilings. As a breeding place for vermin unsightly cracks are a distinct deterrent to the prospective renter. Such a condition makes insecure the investment of owners in apartment house property and is even apt to be reflected in the market value of bonds issued for their construction. The question then arises, how much additional will be the actual cost of using better plastering so that obsolescence and depreciation can be largely averted and thus maintain the rentability of apartments and insure the safety of the investment in the building.

Statistics compiled from reliable and authoritative sources throughout the country, indicate that it costs somewhat more to apply plaster on metal lath than it does on ordinary lath. This difference arises because plastering on metal lath is usually three-coat work, while plastering on ordinary lath is in most cases two-coat work. In general, more plaster is used to cover metal lath than is used on wood lath. This follows because the open mesh in the metal lath permits the plaster to squeeze through so as to imbed the lath and place it in its logical position in the plaster slab, viz., about midway between the front and back surfaces, and to provide a substantial key to prevent falling plaster. A full thickness of plaster on metal lath insures rigidity and prevents plaster cracks, and this advantage is passed on to the owner.

Against this, there is the common practice of applying wood lath so closely together that there is practically no opportunity for the plaster to form an adequate key. This enables the plasterer to "skin" the job as he can cover the surface with a minimum of plaster and with a minimum of keys. Naturally, such a procedure weakens the bond of the plaster to the lath and when placed so close together there is a marked tendency for the lath to swell and crack off the key. This then leaves merely a surface bond between the wood lath and the plaster, which is subject to disintegration and plaster cracks. On the other hand, first class wood lath if placed at least three-eighths of an inch apart as specified by reliable architects and plastering contractors, permits the plasterer to fill up the joints and make a satisfactory key which will insure relative freedom from plaster cracks. When done carefully, the difference in cost between wood lath and metal lath is reduced substantially.

Even with a full thickness of plaster and adequate keys on wood lath, there is still the ever-present possibility of streaking. This is caused by the great difference in the conductivity of the wide strips of lath and the narrow strips of plaster between them. Experiments have shown that with a cold attic or circulation between the floor joists, and a warm room underneath, the "sweating" of the ceiling will occur most frequently at the places on the ceiling, which are just under the joints between the lath. This sweating consists frequently of only microscopic particles of moisture and it is on these little wet strips between the lath that any dust which is present will collect so that in time a definite dirt streak becomes apparent, and the location of each and every lath can be readily traced by a glance at the ceiling.

The same, however, is not true of a ceiling which is plastered on a metallic base. The metal acts as a temperature distributor so that the entire plastered surface is at practically the same temperature and if any condensation takes place, it is uniform over the surface and the streaking is absent. It is for this reason that many builders are coming to use the metallic base for their plastering because it has been found that whereas some apartments need decoration every year, others that are plastered on metal lath can go without decoration sometimes for two years or more, simply because of the absence of streaking and discoloration.

This matter of redecoration, now that labor and materials for this class of work have risen to such high figures, is manifestly one of large expense which in many cases forms an appreciable part of the income from an apartment building. The prospective builder or investor in such types of residential occupancy, can well afford to look very care-

ully into this matter of better plastering, especially when it is realized hat the added cost of plastering on a metallic base in many cases runs s low as 25c per square yard.

Considering also the matter of plaster cracks a prospective renter idges the character of the building in general by the condition of the alls and ceilings. Cracks are most apt to occur in corners because it there where different types of construction, subjected to different tresses, join. The use of strips of metallic lath to reinforce these rners is recommended. They are, undoubtedly, the least expensive em which goes into the cost of plastering and applied over ordinary th or plaster board, where walls and ceilings come together, the plaster thus reinforced at its most critical point.

The owner of an apartment must give consideration to this very imple method of reducing the large expense caused by corner cracks. wo such cracks in opposite corners of a room may require its entire e-decoration at a cost which would vary anywhere from $10.00 to $25.00 epending on the type of decoration. The actual cost of building metal th into the corners of a room will not amount to more than possibly 1.00 a room, so that its use can be of very material benefit to the rospective builder.

Outside of the purely commercial advantages to the owner of an partment building, in using better plastering as a means of reducing pkeep expense and maintaining the re-sale of his building, there is the urther very important advantage of having a building which is fire-esistive to a remarkable degree. The use of metal lath as a plastering ase and protection for wood studs and joists, results in what is known s "Protected Construction," which has been given a full one-hour rating y authoritative testing laboratories. Many cities and the codes of many states, now require this type of construction as a minimum pro-ection for certain parts of apartment houses in order to insure safety f life to occupants.

* * * *

Skylight Illumination Simulates Daylight in Hotel Lobby

ILLUMINATING engineers have done marvels in recent years in devising ways to simulate daylight in dark rooms. They have made it possible to take a large, windowless room, from which natural ight is barred, and flood it with an artificial sunlight that gives eye-comfort.

Expositions of their successes in this line are to be seen in many large hotels where the public rooms are made light as day by means of concealed lights in combination with diffusing devices. A notable example is the great lobby of the Pennsylvania Hotel in New York. Here is a room centering the present largest hotel in the world and in which, day and night, there is a beautiful, soft light that is uniform in every part, and free of glare or shadow. This light comes through the great skylight in the ceiling.

Skylight lighting is produced in a very simple manner. A group of X-Ray reflectors of the Beehive type are mounted from one to ten feet above the skylight which is made of diffusing glass. The result is a splendid distribution of glareless light. This method of lighting is extremely efficient, as it utilizes practically all the illumination without waste. The illustrations on the next page are shown by courtesy of the Hotel Monthly.

LIGHTING SYSTEM, AS INSTALLED ABOVE THE SKYLIGHT OF THE LOBBY IN THE PENNSYLVANIA HOTEL, NEW YORK

LOBBY OF THE PENNSYLVANIA HOTEL, NEW YORK, SHOWING ILLUMINATED SKYLIGHT

Proper Methods of Constructing Tennis Courts

By W. E. ROSENGARTEN, Engineer

INTEREST in lawn tennis has been increasing in recent years and with it there has developed a strong desire for more nearly perfect court surfaces. The qualities which are sought are greater smoothness than can usually be retained in the ordinary sand clay tennis court, and greater firmness and resiliency. Paved surfaces, particularly those of asphalt, permit of fast and true play without serious fatigue or injurious effect upon the players. An important consideration from the standpoint of ultimate economy is the construction of a surface that can be kept in perfect condition at small labor and expense throughout the playing season.

Of the many thousand of tennis courts that exist throughout the United States only about 10 per cent have been given hard, smooth, paved surfaces and the trend toward the best in tennis courts is, I believe, therefore only in its initial stages. The most satisfactory results thus far obtained in modern playing surfaces are with some form of construction either of asphalt, sand and stone mixtures or macadam bound with asphalt and constructed similarly to the paving on our streets and highways.

While there are asphalt paved courts located at Detroit, Michigan; South Bend, Indiana; Calgary, Canada; and other points, they are most common in the Pacific Coast section of the country. Their general use there is due largely to the fact that in California is obtained an abundance of petroleum which yields asphalt, a popular and readily available local product. Because of the greatly increased use of asphalt for paving and roofing within the past few years and the establishment of asphalt plants at convenient points, sources of supply and competent construction facilities for asphalt courts are now within easy reach of any community. While the greater portion of the asphalt supply in the United States is obtained from Mexico, petroleum asphalt is also obtained from the Middle West, Southwest and the Pacific Coast and Rocky Mountain sections.

Asphaltic tennis court surfaces are waterproof and, in consequence, not only are the courts available for play within ten or fifteen minutes after a rain but the surface is thoroughly protected against washing or disintegration such as are frequently caused by heavy downpours on sand, clay or earth courts. A maximum smoothness is obtainable in the asphalt playing surface and this smoothness is retained throughout the play on account of the fact that the powerful adhesive character of the asphalt prevents any displacement of the surface material. Asphalt is a flexible and resilient material and makes possible long and continuous periods of play without tending to tire out or stiffen the players. The freedom of the surface from sharp, angular fragments or from rigid, gritty texture tends to conserve the soles of the players' shoes as well as the tennis balls, since there is practically no abrasion.

While the original cost of an asphalt court is somewhat greater Than a sand, clay or gravel court, the initial cost is retrieved in a very short time because a properly constructed asphalt tennis court requires practically no upkeep.

Proper drainage is of primary importance for an asphalt tennis court just as it is in the proper construction of a highway. In sandy or gravelly soil the drainage problem is not serious and the water drains away easily and naturally. Soils in which clay predominates, however,

will retain water and unless proper drainage facilities are provided the best subgrade under the surface will not provide sufficient support for the pavement. Where such a soil is encountered drainage is obtained by digging a ditch two or three feet deep along each side of the court and giving to these ditches a slight grade or fall in the direction of the general slope of the ground. In the bottom of these ditches there should be laid a small sized, open-joint tile after which the trenches should be back-filled with broken stone to within a few inches of the surface. This drainage system will collect the ground water and lead it away from the subgrade. Drainage of surface water from the court itself will be obtained by giving the finished surface a slight slope of one inch for each ten feet of distance.

In the construction of the tennis court the subgrade should be leveled and finished to an elevation such that when the playing surface is applied the latter will be flush with the shoulders or the surrounding sod, thus permitting an uninterrupted drainage of surface water after the court is completed. Where fills are made they should be thoroughly compacted and allowed to stand until they have been subjected to several heavy rain falls before surfacing is attempted. The paved area of a tennis court should be 60 x 120 feet. As the outside dimensions of a double playing court are 36 x 78 feet, such a paved area will afford ample room for play outside of the lines.

After the grading and drainage work has been completed and the subgrade is dry and compacted, a foundation course of steam cinders of from 4 inches to 6 inches in thickness may be applied to good advantage. Ashes from house furnaces are not desirable for this purpose. The cinders should be thoroughly compacted by sprinkling with water and rolling. Too much stress cannot be laid upon the importance of a thoroughly rolling since it constitutes insurance against trouble later from the settlement of the paved area. Equal, if not better, foundations can be obtained through the use of crushed stone, gravel, slag or similar local materials, or from a three-inch bed of Portland cement concrete. A superior type of foundation may be laid if an asphalt paving plant is accessible by laying a mixture of stone and sand bound together with asphalt according to up-to-date paving specifications and at a thickness of about two and one-half inches.

As suitable a type of surface course as can then be laid upon the foundation is the sheet asphalt pavement similar to that which is commonly laid on great thoroughfares like Fifth avenue, New York. This consists of a mixture of hot sand, limestone dust and asphalt cement, and should be laid to a thickness of from 1 inch to 1½ inches. This material should be prepared at a mixing plant. Asphalt paving contractors are, of course, quite familiar with this type of construction and complete information can be obtained from them as well as the local engineer in charge of city, street or country highway paving.

Where the base course is of broken stone or cinders, it will be desirable first to lay what is known as a binder course about 1 inch in thickness upon the foundation before laying the sheet asphalt surface course. This binder course is similar to the asphaltic base mixture mentioned above. It consists of stone ¼ of an inch to ¾ of an inch in size, which is mixed with sand and asphalt cement and laid in the same manner as later described for the sheet surface course. The binder course mixture should have the following proportion by weight:

Stone retained on a sieve having 10 wires per inch..... 60 to 80%
Sand passing a sieve having 10 wires per inch.....15 to 35%
Asphalt cement (pure bitumen) ..... 4 to 6%

The sheet asphalt surface course, which will not require the above described binder course of the foundation be of asphaltic concrete or Portland cement concrete, should be from 1 inch to 1½ inches in depth. In order to obtain the best results a carefully grader sand should be employed. This, when mixed with the asphalt and limestone dust, which should pass a sieve having 200 meshes per inch, should give a mixture which will have the following composition by weight:

Sand passing a sieve having 10 meshes per inch and retained on a sieve having 40 meshes per inch.....10 to 40%
Sand passing a sieve having 40 meshes per inch and retained on a sieve having 80 meshes per inch.....22 to 45%
Sand passing a sieve having 80 meshes per inch and retained on a sieve having 200 meshes per inch.....12 to 30%
Dust passing a sieve having 200 meshes per inch.....10 to 20%
Asphalt cement (pure bitumen).....9.5 to 12%

The asphalt cement for both the binder and surface courses should be of a consistency such as to show a 50 to 60 penetration test when used in warm climates and from 60 to 70 when used in cold climates where the temperature falls below 10° F.

The above mixture should be prepared at a paving plant where the sand and asphalt can be heated to approximately 350° F. A temperature above 400° F. is not desirable since it tends to injure the asphalt. The quantity of asphalt paving mixture necessary for one or two tennis courts would hardly be sufficient to justify the setting up of an asphalt paving plant, it is therefore desirable to obtain the mixture either from a municipal plant or a contractor's street paving plant in the vicinity. After it is prepared the mixture can be hauled hot by truck any distance ranging up to 20 miles if necessary.

Where a hot-mix asphalt plant is not available a cold mix may be made with especially treated asphalt products known as emulsified asphalts and cut-back asphalts which are liquid at ordinary temperatures. Satisfactory materials of this kind are on the market and can be mixed with unheated sand to produce a paving mixture that will harden in a few days and produce a stable surface.

The surfacing material should be dumped from the trucks upon boards or platforms from which it can be spread by shovels over the prepared foundation course and then raked to a depth such that after rolling it will be at least one inch thick. Rolling should follow shortly after the spreading and while the mixture is still pliable. Thorough compression is essential and while heavy hand rollers will give satisfactory results it is preferable to use a power roller of at least five tons' weight if one is available. After thorough compaction has been obtained it is desirable to sweep over the surface a sprinkling of limestone dust or Portland cement and to finish the surface with a final rolling in all directions diagonally and longitudinally.

An asphalt surface does not produce glare under sunlight. It has dark gray color that is restful to the eye. In some cases, however, it has been thought desirable to tint the surface with a green cromic oxide paint to give it more nearly the appearance of the grass court. Various other solutions are also to be found on the market for this purpose and

can be applied by means of a forced spray. The lines are marked out by means of stencils with a solution in white. The best results are obtained by applying the solution in two thin coats. The second coat should not be attempted until after the first has thoroughly dried. On some courts a special finish has been used which gives the surface a pleasing color of deep red.

The accompanying table gives the quantities of materials required for the courts above described.

FOR ASPHALT TENNIS COURTS
QUANTITIES OF MATERIALS REQUIRED
(Per square foot of paving. One inch thick)

MATERIAL	Compacted foundation per 1 inch thickness	Asphaltic binder coarse per 1 inch thickness	Sheet Asphalt surface per 1 inch thickness	Penetration macadam surface per 1 inch thickness
Crushed Stone	10 lbs.	8.6 lbs.	.....	12.0 lbs.
Sand	.....	3.3 lbs.	8.5 lbs.	.....
Stone Dust	.....	.....	1.6 lbs.	.....
Asphalt Cement	.....	0.7 lbs.	1.2 lbs.	0.9 lbs.
Total	10 lbs.	12.6 lbs.	11.3 lbs.	12.9 lbs.

Note—Stone weighs (loose) 2400 to 2800 lbs. per cu. yd.
Sand weighs from 2300 to 2600 lbs. per cu. yd.
Asphalt weighs from 8.3 to 8.8 lbs. per gallon.

* * * *

Color in Architecture*

By CHARLOTTE BISAZZA

"I CANNOT consider Architecture as in anywise perfect without color."—Ruskin.

Architecture as mistress of all the Decorative Arts draws upon color from rich sources—marbles, metals, enamels, mosaic and stained glass materials, color in cement, terra cotta, polychrome, brick, etc.

Since Nature, the Great Mother, lavishes constantly changing color in sky and sea and the mysterious creatures within its depths, innumerable birds, insects, stones, gems, trees, flowers and weeds of infinite hue, it is not strange that mankind, too, revels in color—and the higher his culture and civilization the more exquisitely and profoundly he seeks to use this power of beauty—not using it more conservatively but with more learned discrimination.

The surviving Art of every great era is the most perfect and accurate record of tracing the height of its past civilization—it is, therefore, the most inspiring to note the use of color at the high peaks of civilization of other days.

Processions of warriors and ancient kings decorated the walls of Assyrian cities in a gorgeous pageant of color, the artist combining with the archaeologist has disclosed the admirable height of beauty to which Egyptian Art has risen, color was everywhere evident on outer architectural decoration as well as interior.

Restored models in the Metropolitan Museum demonstrate how the Greeks, who had secured perfection of form in architecture, also reveled in gold, silver and brilliant color to complete the whole.

Later the Romans, with opulent marbles, mosaics and gold and the Etruscans with terra cotta of resplendent decorations recognized architecture could be noble, dignified and beautiful with proper use of color to enrich the whole.

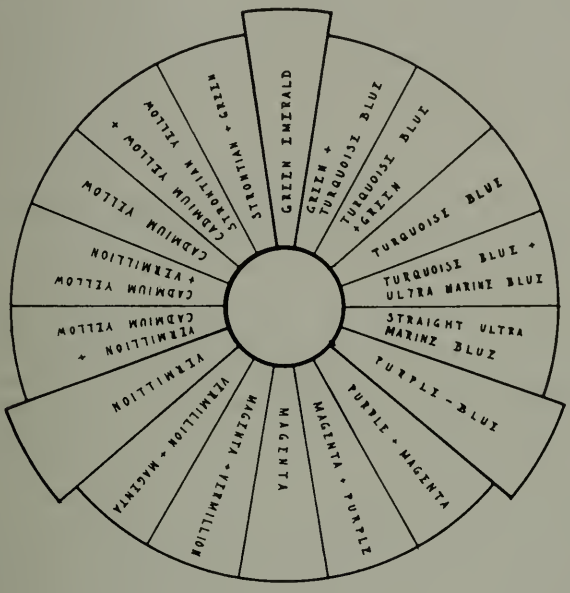
*A paper read before the Washington State Chapter, A. I. A.

The Pompeians with sumptuous colors in interiors also gave a illiant touch to the exterior as did also the sophisticated Chinese who ied lacquer, gold and painted color.

The Golden Age of Decorative Art in England from the 14th to te 15th century testified to use of refined and beautiful color, while the stumes of the people were a gorgeous pageant of brilliant hue.

The splendor of the wealth of color in the Alhambra and Granada Spain is a continual source of wonder—the temples of India recall te exquisite Taj Mahal, the churches of Russia the remarkable St. Sophia—and while they are a far cry to the peasant homes, quaint, gay, ad delightful, of Sweden, Germany, Iceland and Holland, still they do ht show the prevalence of the love of color in the hearts of all races.

The naivete and spontaneity of the color in the Middle Ages when te master artist—artisan worked with his elemental colors and tools



ealing actually with the materials themselves as freely as an artist ses a palette, produced results surpassingly fine. The Italian faience, rra cotta, the rich color of Andrea della Robbia—the intricate and mazing beauty of the Sienna master pavement workers flowered into ne splendors of the Renaissance and the glory of its cathedrals.

With the final advent of the Reformation and the hate and fear of eauty came the crushing of the spontaneous use of color—this glory f the Middle Ages was white washed and plastered over.

The modern revival of delight and interest in the use of color is mely after an interregnum of drabness, and gray dullness.

While use of color cannot be reduced to mere rule of thumb, for xcellence of skill results from accumulated experience of predecessors, rplanted by keen knowledge and intelligent, cultivated powers of ob- ervation which make the artist, still review of the basic principle of olor theory are helpful to gain freedom, surety and confidence.

Light is invisible, but reflected light consists of three vibrations which are called positive or primary colors.

Red is a sharper and faster vibration and impinges many times over blue.

Combinations of light vibrations produce:

Red + purple-blue = Magenta.

Green + purple-blue = Turquoise Blue.

Green + red = Yellow.

Color possesses three properties: (1) Hue—differing sensations, i.e., green, green-blue and yellow-green.

Analagous color harmony is built on this theme—start anywhere on the color wheel and run between two primaries.

In architecture the effect obtained by distribution of two or more colors that combine in a textural presentation as one color of some generally prevailing cast, i.e., Turquoise blue appearing in mosques which are generally polychromatic tile of intricate pattern, give better unity than perfectly plain color broken only at wide intervals by units of design which recall themselves in repetition, and which have a tendency to dissect design, especially if there is too wide a separation of use of varied materials.

(2) Value—distinguishes light and dark contrast, i.e., in relation to the neutral value scale which runs through white to black in tonal graduation of intermediate grays. Yellow comes nearest white, violet nearest black—red and blue come near middle gray.

Just as white focuses near and black further away, so yellow appears near and violet appears to recede. It is very essential to get correct color value. When using light or intermediate value in juxtaposition and trying to keep them on one plane so that one does not pop out and the other recede, it is sometimes necessary to lower the intensity of one and raise the other to higher intensity. One method is to use sequence of values in rhythmic progression, either in equadivision in the steps, or wider steps to start and graduating in lesser degree.

(3) Intensity—is the degree of pureness expressed in color. Any color at fullest saturation is "normal," from thence ranging to white it becomes variations of the tints, and from "normal" ranging down becomes the shades (produced in pigments by adding the complement or black), i.e., light red (popularly known as pink to pure middle red), thence down to dark red and into black.

LAW OF COMPLEMENTS

Light when broken by refraction produces contrasts (opposites on the color chart, i.e., red and green or orange and blue). Gaze steadily at normal blue long enough, take it away and in the same place you see the complement orange. Place two complements together of normal intensity and the light rays impinge on each other, producing a blurred effect which jars on the optic nerve. Law—Avoid equal areas of sharp contrast of hue in juxta-position. Very pleasant color harmony can be built on this law of opposites in various ways. (a) Vary the amount—a large proportion of either and a small jewel-like spot of the complement of higher or lower intensity. (b) Or add a common note of color to each, as in red and green. Use a red leaning toward orange and a green toward yellow-green (the yellow in each acts as a tie, or use a red leaning to magenta and blue-green, then the blue acts as a tie). (c) Gray with its complement, and use the other with either brilliant

intensity or slightly grayed in smaller quantities. (d) Use with a modulating color between any of the above ways or in full intensity.

USE OF MODULATING COLOR

Where any two contrasting colors are used either in hue, vale or intensity, the use of a modulating color in between will assist carrying the eye from one to the other without an unpleasant jump, the effect may even be subconscious, i.e., magenta and turquoise blue with a modulating line of color related to each, as purple-blue between the two; or in using fields of color of near value the old Gothic designers used white, gold or black, etc., to set each color off, or often they superimposed a fine line design, etc., on a field of color to tie it down to the neighboring area. The renowned stained glass window workers of the thirteenth century used black. The Moorish Mosaic workers used white, which united the whole into an exquisite harmony.

BROKEN SURFACES

Use of color in variation of intensities, i.e., light blue, medium blue and dark blue in a broken surface (stiple, inlay, etc.) often presents a more interesting surface than a flat monotonous tone. Variation of hues have the same purpose in like juxta-position, i.e., an interesting blue and green used thus tend "to mix in the eye," and produce a more vibrant, vital effect than simply a flat blue-green tone. Such combinations present innumerable variations.

FOR COLOR HARMONY

Decide on dominant color and area.

Work for sequence of hue impression (leading from one color to another).

Work for sequence of value.

Work for sequence of intensities (grayed to brilliant color).

Work for sequence of areas and amounts. The object is to keep colors from jumping out and not focusing (on the right plane) beyond a diminishing ratio of contrast in gradual sensations or impressions and give a beautiful harmony of contrasts.

In an ideal color scheme all three variations are needed—any two hues blend but a third is needed for balance, i.e., emerald green and turquoise blue schemes need a grayed complement or small jewel-like proportions of some opposite color. Work for a dominant sensation and then balance with some opposite color. This provides warm and cool balance.

WARM AND COLD COLORS

Orange, red and yellow=warm colors.

Blue, violet and green=cold colors.

Yellow-green is warmer than blue-green. Magenta-red is cooler than orange-red. The same holds in grayed values, i.e., grayed red-violet is warmer than grayed blue-violet, etc.

GENERAL EFFECT OF COLOR

Color is an emotional element-line and form the intellectual.

Doubtless from trains of thought association built up by contact with nature, color symbolism has played a large part throughout the ages—which suceeding civilizations have borrowed from the past. Note the use in savage finery, symbolisms of color expressed in paintings of religious subjects by the old masters, also its use in our present-day stage design, etc., to say nothing of the scientific use of color in a therapeutic way as a curative.

Green—Passive, restful (sea expanses, forest glades, verdure of growing things).

Gray-yellow—Hate, envy, malice (on stage).

Red—War, passion, valor, blood, fire.

Orange, yellow—Youth, joy, ecstacy (Sun).

Blue—Quiet, restful, mentally active, physically passive (good color for work room; expanses of sea and sky). Symbolic of loyalty and truth.

(In Mrs. Fiske's role of Becky Sharp, a cold, metallic blue was used to designate a shrewd, calculating personality.)

Violet—The color of mourning, mystery, royalty. (Color of distance, shadow.)

Color on the stage plays a great psychological part. Whether the audience realizes it or not, they get the subconscious effect. The same necessarily carries over into daily life.

"Organic constructural design must remain dominant, and colorization sustain and emphasize it. The unit of chromatic ensemble must not violate formal design."

There can be no hard and fast law—proportionate use of color as to area and amount and correct value plays an important part.

No ugly color really exists, but there is a wrong use as to area, amount or relationship to surrounding area. Likewise any two colors may be so qualified in character that it will be possible to use them together harmoniously.

The carrying power of colors varies at close range and at a height, especially under varying circumstances of atmosphere and sunlight.

In the Northwest we have gray, rainy, winter days, and while it is true that the luminous quality of Southern atmosphere with brilliant light vibration produces a rich light and shadow on the color and style of architecture peculiarly adapted to that clime, and which doubtless would not be suitable to the Northwest, still that should in no wise hinder us or limit the possibility of the use of color in the right way—for rich appropriate color fits into its surroundings as readily as the charming colors of an Oriental rug either into a modest or pretentious dwelling.

As long as life endures there will be the normal human hunger for gaiety, joyousness and the emotional and spiritual appeal of every kind of beauty. Color supplements form and may give romance, grace, exotic beauty, spiritual grandeur, inspire confidence, or tell of commanding, enduring strength — run the whole gamut of emotion and Color, the Handmaiden of the Arts and Sciences, will be there—be you but the master! A spiritual force through the emotion it engenders,—symbolic of the intellect, the emotion and the soul.

* * * *

Stones in the Tribune Tower

THE new tower building of the Chicago Tribune, that beautiful Gothic pile that rises 473 feet above level, will never cease to be one of the wonder buildings of American architecture. From the moment of its inception as a mere idea, through the period of its planning when its shape took form in the prize winning design submitted by John Mead Howells and Raymond M. Hood, the structure has held the attention of the building world as no other has done in a decade. Now that it has been completed minor facts and details are beginning to become known, notably among them something of the many and varied

materials that entered into its construction and decoration. The exterior of this beautiful tower is "Old Gothic" Indiana limestone. All of that part of the tower above the 25th story contains approximately 125 car loads of highly carved and ornamental stone. The interior, finished for the most part in Travertine marble and mahogany, oak and statuary bronzes and antique plaster, also contains a wealth of stones, many of them from other buildings, historical places, shrines and universities. This list follows:

A stone from the old general postoffice building, Dublin, Ireland.
A stone from Hamlet's Castle, Helsingor, Denmark.
Part of Japanese lantern from the shrine of Hibija Daijingun, Tokyo, Japan.
A stone from Princeton University, Princeton, N. J.
A stone from the old chapel at Yale University, New Haven, Conn.
A stone from Westminster Abbey, London, England.
A stone from Edinburgh Castle, Edinburgh, Scotland.
A stone from the oldest part of the building of the Cologne Cathedral, Cologne, Germany.
A stone from one of the gables of the windows of a chapel in the nave facing south in Notre Dame Cathedral, Paris, France.
A stone from Taj Mahal, Agra, India.
A stone from Trondhjem, Cathedral, Norway, 1200, A. D.
A stone from the Great Wall of China from that portion to the southwest of Nankow Pass.
A stone from the Parthenon on the Acropolis, Athens, Greece.
Stone from the Royal Castle, Stockholm, Sweden.
Stone from Fort Santiago, Manila.
Stone from Lucia Barracks, Manila. Also a stone taken from an old Chinese graveyard which was brought as ballast by Spanish ships at the beginning of the 17th century.
Stone from Fort San Antonio Abad. This fort was a target for Admiral Dewey's bombardment in 1898.
Carved Marble post from bridge of the Forbidden City, Peking, China.
Yellow tile from the winter palace, Peking, China, erected in the 18th century.
Green tile from the roof of a temple in the Forbidden City, Peking, China, 15th century.
Carved Guardian Angel from the ruins of an ancient temple in Honan Province, China.
Carved stone from Cologne Cathedral, Germany.
Four stones from the battlements of the Fortress Ehrenbreitstein, Rhineland, Germany.
Stone from the Senate Press Gallery, Washington, D. C.
Stone from the citadel (David's Tower) Jerusalem.
Stone from Luther's Wartburg Castle.
Stone from Byron's Castle of Chillon.
Stone from Massachusetts Hall, Harvard University, Cambridge, Mass.
Piece of Cornice from the ruins of the Santo Domingo monastery and church, Old Panama.
Stone from Santa Sophia, Constantinople. About 548 A. D.

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Can You Swallow This Tablet?

The American Institute of Architects has put up a placque at the Octagon House saying that it has been the headquarters of the American Institute of Architects since 1800. According to a Washington newspaper, the Octagon was built in 1800 and was not occupied by President Madison until 1814. Did the architects get out when the President walked in? Did they rent it to him? Did they get their money? Was Madison as slow as the Madison avenue street cars?

For the best answers to the above, we will give an illustrated postcard of an occupied bathtub.—The Architect.

FIRST CONGREGATIONAL CHURCH, OAKLAND, CALIFORNIA
JOHN GALEN HOWARD AND ASSOCIATES, ARCHITECTS

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The ARCHITECT and ENGINEER

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BUILDING TRADES employers are not ready to accept organized labor's new wage theory that "the worker's real wages must be increased in proportion to his increasing productive power." They still hold that wages should be based on the law of supply and demand. C. G. Norman, chairman of the Board of Governors, New York Building Trades Employers' Association, in an article in the July issue of the Miller Builder - Economist, declares that "nothing has appeared under collective bargaining to substitute the cost of living and standard of living basis of wage adjustment." He also says that the workers may have an "increased power of production," but do not produce.

PROPER STAGE DESIGN

The subject of proper stage design for theatres, auditoriums and schools is being given more study today than ever before, due undoubtedly to the combination of uses to which the stage is subjected. It seems that there have been a great many unsatisfactory stages built. Faulty acoustics, poor vision, impractical arrangement of scenery and curtains, are some of the faults which specialists have been called upon to remedy after completion of play houses.

That architects, engineers and others engaged in the design of public buildings of this type may become better informed upon stage requirements and equipment, arrangements have been made for a series of articles in this magazine on the subject by Mr. Dariel Fitzkee, an engineer of recognized ability. Mr. Fitzkee will discuss frankly the other fellow's weaknesses and will endeavor to outline corrective methods which should prove beneficial. Mr. Fitzkee says he is sure some of his readers will profess to know everything at the outset and probably for that reason will not try to profit by reading his suggestions. Those who are thus inclined he would ask one or two questions and if they are able to answer them correctly he will be content to sermonize only those who fail in their answers. And these fellows he will be glad to help further if they will take the trouble to write him in care of The Architect and Engineer, their names to be held in strict confidence. Here are the questions—can you answer them?

Do you know which offers the most frictional resistance — a 20-inch roller bearing block supporting an asbestos curtain, or an 8-inch roller bearing block supporting an ordinary drop?

Do you know what a bridle is, and do you know that it is possible to eliminate one whole line,

lead and loft block by using a bridle?

Which is the most practical pin rail, wood or iron? Why?

How should an asbestos curtain be sized?

There are many other questions that could be asked, says Mr. Fitzkee, who estimates that less than one per cent of the architects reading this will do better than solve fifty per cent of these questions. And they are fundamentals.

For that reason, then, Mr. Fitzkee in his articles, the first of which begins in this issue, is going into the subject more fully than is usually done. He will obviously, explain practical layouts of stages, and their reasons. He will attempt successively to go into the matter of stage equipment itself; the construction and manufacture of stage scenery; design; colored lighting and ideal equipment for all uses.

A clear understanding of these fundamentals will unquestionably eliminate grief in specifications, as well as design.

If you have any questions to ask, write Mr. Fitzkee, care of The Architect and Engineer. If you request it, should the answer appear in these articles, your name will be kept confidential. If the author cannot answer your questions, he says he will find someone who can.

GRADE CROSSING ELIMINATION

The appalling death rate from grade crossing accidents has stirred the authorities and Mr. R. M. Morton, California State Highway engineer, has announced his willingness to carry out a program of grade crossing elimination if the people will get behind him with a substantial bond issue.

There seems to be only two effective methods of saving life at grade crossings. First is by education of the public to proceed slowly, to look, and listen, and second, by costly elimination. Where elimination is not possible by means of relocation it must be accomplished by the building of grade separation structures, and large sums will be required to make much progress. The State can well afford to pledge its credit by means of a bond issue for the building of grade separation structures. The railroads are usually willing to contribute in proportion to the benefits received.

Californians interested in the movement for elimination of grade crossings may well study the program of the State of New York where the people recently voted a bond issue of $300,000,000 for wholesale correction of this dangerous situation. The constitutional amendment providing for the bond issue authorizes the state to loan $225,000,000 to railroads and political subdivisions of the state which are to repay it with interest over a period of years. The state will contribute outright $75,000,000 as its share of the cost of the undertaking to make the highways of New York safe.

BUILD BY INSTALLMENTS

There has been much discussion pro and con on the advisability of extending installment payments to different branches of building work. The plan gives contractors their money for a job when finished and it gives owners the privilege of enjoying the building or improvements many years in advance of that possible by the "save the money first" plan. There would be precious few automobiles, pianos, radios, etc., sold today were it not for the easy method system of payment. From the Chamber of Commerce of the United States comes the report that installment buying has now reached the figure of $5,000,000,000 annually.

ELECTRIC HEAT FOR BATHROOMS

For a while the bathroom remained the only room in the house not yet exposed to public view upon the stage. But no more! The

bathroom has been given its place in the spotlight.

Small wonder, when it is considered what beautiful bathrooms are available nowadays, with plumbing manufacturers vying with each other to produce more charming bathrooms, not only in elaborate sales rooms but in equally elaborate advertising pages.

Nor has the bathroom escaped the attention of the electrical fraternity, says a writer in the Journal of Electricity. Special fixtures to harmonize with the morning shave, immersion heaters for the shaving mug itself, electric water heaters and sundry other appliances have been offered by the industry to make the bathroom a place of everyday pleasure instead of a Saturday night saturnalia. Yet the fact remains that many homes are not equipped for the one real joy of electricity in the bathroom, that of electric heat.

If other means of heating are preferred for other rooms of the house, electric heat is often the only sensible heat for the bathroom. From the standpoint of sanitation, convenience, and quality, electric heat in the bathroom has no real rivals.

ETHICAL ADVERTISING

Anyone who turns out an architectural paper learns early that in one respect the architect is far in the rear of any of his professional brethren.

The number of the profession who realize the value of placing before the public pictures of finished work is nil. Independent of the fact that the architect may feel a timidity about taking the limelight; there is the greater importance of educating the public to good work, and to a knowledge of the progress of architecture.

It would seem to us that every time a good building goes forward, the architect should deem it a duty to himself and to the profession, as well as the public, to see to it that a good plate is made of the building in perspective and again at completion.

Such a cut, if good, would be in demand, and be good ethical advertising for all concerned, including the city or town in which the building is erected.

The architect might write a description of the building as well; for it is a fact that this sort of information seems to be appreciated by the layman as well as by builders.

—Washington State Architect.

It is true the average architect is indifferent about advertising his work. He seems to lose sight of the fact that his achievement is a contribution to the world and that if he aids in its exploitation he will have done something worth while for his profession. Of course there is nothing to prevent any one so disposed from photographing a building regardless of the architect's wishes in the matter. But how much better it is for him to co-operate and assist in the presentation of his work which in many instances represents the accomplishment of his dreams and fulfillment of his aspirations.

Warsaw's Architecture is Dull and Ponderous

Evidently the architecture of Poland is on the decline if we are to believe the statements of Maynard Owen Williams, who writes entertainingly of the struggling European country in the July number of the National Geographic Magazine. To quote Mr. Williams:

Beautiful parks and gardens surrounded by dull, gray, depressing streets are the first impressions which Warsaw, the capital city, makes upon the visitor.

The buildings are huge, impressive because of their size but not picturesque. One can imagine the way one of the big office buildings, for instance, was ordered:

"I want four caryatid figures, 800 feet of pilasters, eight balconies—make 'em heavy, understand—six dozen assorted whorls and sunbursts, and five tons of cement gingerbread. What's that? Windows? Oh, yes; you might put in a few of those, too."

To Serve as Consultant

Stephen S. Childs, city planning expert of San Francisco, will serve the Berkeley City Planning Commission as a consultant. The City Council has appropriated funds for the commission and City Manager John N. Edy has made the appointment. Among the studies to be made by Mr. Childs will be the regulation of heights of buildings and a general regional plan for the city. Arterial highways for the city are also matters which will be taken up during the year with the planning expert.

With the Architects

Building Reports and Personal Mention

Architects Society of Hawaii

The Architects Society of Hawaii has applied for permission to become a Chapter of the American Institute of Architects. The society has fifteen members and two of its officers are well known in California where they at one time practiced their profession. The officers are:

President, Hart Wood; vice-president, C. W. Dickey; secretary and treasurer, Wm. C. Furer; directors, Messrs. Wood, Dickey, Ralph Fishbourne and Herbert Cohen.

Spanish Architecture

Beauties of Spanish architecture were emphasized in an address before the Rotary Club of San Diego by Richard S. Requa, San Diego architect, who recently returned from a tour of Spain and other countries bordering on the Mediterranean. The lecture was richly illustrated with motion pictures taken by Mr. Requa. They showed not only the distinctive beauty of the buildings, principally those at Cordova, but pictured them in bright sunlight, with all the life of the Spanish city.

Given Nice Commission

Architects Woodruff M. Somervell and John L. Putnam, 905 Commercial Exchange building, Los Angeles, have been commissioned as associate architects with Architect Lee Thomas of Portland, Ore., to design the new half-million dollar alumni hall building at the Oregon Agricultural College, at Corvallis, Ore. The building is to be built and donated to the Oregon Agricultural College by the alumni association of that institution.

For 28-Story Building

Los Angeles city council has notified the city clerk that the proposed amendment to the city charter to permit the erection of a city hall to a height of 28 stories cannot be placed on the ballot until the November election. It had been the intention to submit the amendment at the primary election August 31, but this cannot be done under the state election laws.

Hotel for Woodside

A five-story and basement country hotel is to be built at Woodside Acres near Redwood City for the lease of J. H. Van Horn, formerly manager of the Hotel Whitcomb, San Francisco. Plans are being prepared in the office of Architect C. H. Barrett, Washington Hotel, San Francisco.

More Certificates to Practice

The following candidates taking part in the state examinations for architects at the University of Washington June 5, have been granted certificates: J. E. McGuire, Tacoma; F. W. Bookerman, L. E. Gowan, E. G. Morgan and R. J. Pearce, all of Seattle.

The following applicants were granted architects' certificates at the last meeting of the Califorina State Board of Architecture, Southern District, July 13: Robert Clayton Yinger, 665 Cahuenga avenue, Los Angeles, and Irving L. Osgood, 311 N. Oakhurst drive, Beverly Hills.

Architect Symmes Busy

New work in the office of Architect Edwin J. Symmes, Shreve building, San Francisco, includes a three-story and basement Class C loft building to be built at First and Folsom streets, San Francisco, for the George H. Eberhard Company and a two-story frame physicians' office building in Alameda, the latter to cost $22,000.

Sketches for Fight Arena

Architect Mark T. Jorgensen, 381 Bush street, San Francisco, has prepared preliminary plans for a Class A fight arena to be erected at Post and Steiner streets, San Francisco. Structure will have a seating capacity of from 8000 to 10,000 persons and will cost $400,000.

San Jose Bank Addition

The H. H. Winner Company, San Francisco, has been commissioned to prepare plans for a two-story Class A addition to the First National Bank, San Jose. Improvements will cost $150,000 and work will be started early in 1927.

Two Apartment Houses

Architect E. H. Denke, 1317 Hyde street, San Francisco, has prepared plans for two fifteen-story apartment houses to be built at Turk and Jones streets, San Francisco. They will have four hundred rooms and will represent an investment in excess of $1,000,000.

Club and Garage Building

Architect Charles S. Cobb, 805 Bank of Italy building, Los Angeles, is preparing plans for a Class A club and garage building to be erected on Grand avenue, near Eighth street, Los Angeles, for the Central Auto Club. The estimated cost is $800,000.

New State Engineer

Governor Richardson has appointed Paul Bailey state engineer of public works, succeeding W. F. McClure,, deceased. Mr. Bailey has been connected with the California state government since 1916. He first served with the state water commission as an investigating engineer and in that capacity made a number of important investigations. He became deputy state engineer in 1921. His chief work in the past five years has been the formulation of the statewide water resources plan, which contemplates the conservation of all available water in the state and irrigation of more than 18,000,000 acres of undeveloped land.

Examinations for City Planner

The U. S. Civil Service Commission will receive applications up to September 7 for city planner at an annual salary of $3,800. The examination is to fill a vacancy on the National Capitol Park and Planning Commission, Washington, D. C.

Applications for positions as architectural draftsmen will be received till August 21.

County Buildings, San Jose

Architects Binder & Curtis, 35 West San Carlos street, San Jose, have completed plans for a $50,000 reinforced concrete ward building to be built at the county hospital. They have also made plans for a one-story frame tubercular wing. Architect William Binder, member of the firm, has recently returned from an enjoyable visit abroad.

San Jose Financial Building

Plans have been completed by A. F. Roller & J. P. West, Crocker-First National Bank building, San Francisco, for a one-story monumental steel frame, concrete and stone bank building for the San Jose Building & Loan Association. Construction will start this fall. The estimated cost is $85,000.

War Memorial Group

Preparations are being made to start construction this fall on the War Memorial Group in the San Francisco Civic Center. Plans have been under way for some time. The city has recently taken over the St. James property and this building is now being razed to make room for the new structure.

Store and Office Building

Architect A. R. Ehrenpfort, 24 California street, San Francisco, has prepared plans for a two-story Class A store and office building at Mission and 20th streets, San Francisco, for Granat Bros.

Architects Move

The following architects have recently changed their office addresses:

L. Smith, architect, moved to 1584 West Washington street, Los Angeles.

Architect H. Ryan, removed to 210 National City Bank building, Los Angeles.

Architect E. L. Hopkins, moved to 1103 Tremaine avenue, Los Angeles.

Architect William Greene, moved to 5352 Fountain avenue, Los Angeles.

Architects Charles E. Garstang and Alfred W. Rea, moved to 911 Pacific Southwest Bank building, Los Angeles.

Architect Harry C. Hartley, moved to 1239 Havenhurst drive, Los Angeles.

Architects Dickey & Wood, moved to 404-5-6-7 S. M. Damon building, Honolulu, T. H.

Architect D. D. Smith, moved to 601 Wilshire boulevard, Santa Monica.

Architect Elmer Grey, moved to 1512 South El Molino street, Pasadena.

Architect W. Hawes, moved to 457 South Western avenue, Los Angeles.

Architect Robert D. Blake, moved to Post Office Box 552, La Jolla, California.

Decision Favors Allied Architects

Validity of the contract between the Los Angeles county supervisors and the Allied Architects' Association for architectural services on the new general hospital for the county was upheld by Judge Shaw of the superior court who sustained a demurrer to the petition attacking the contract "without leave to amend." A new suit will be necessary if the further consideration by the court is obtained.

Club Rio Del Mar

Plans are being worked out in the office of Architects Quandt & Bos, of San Francisco, for a group of club buildings at Aptos-By-The-Sea, Monterey county. The club will be known as the Rio Del Mar and the membership is to be limited to 3000. The project calls for an expenditure of $1,500,000.

Forest Hill Residence

Plans have been completed and a contract has been let for a two-story frame and stucco residence in Forest Hill, San Francisco, for Mrs. F. T. Mozingo. The plans were prepared by Architect Joseph L. Stewart, San Francisco.

Honolulu Office Building

Plans are being prepared by Architects C. W. Dickey & Hart Wood, of Honolulu, for a new office building for Alexander & Baldwin. It will cost $800,000.

Scholarships Awarded

Harvard honored two architect students of the University of Washington, Henry Hoover and Richard Pearce, with scholarships in its graduate school.

PERSONAL

Architects Kuhn & Edwards, 833 Market street, San Francisco, have dissolved partnership. Mr. Kuhn retains the offices in the Commercial building, while Mr. Edwards has opened an office at 525 Market street.

Roscoe A. Johnson has recently opened offices at 212 Pacific building, Portland, Oregon. He will be pleased to receive catalogues and building material samples. Mr. Johnson recently completed an apartment court at Seaside, Oregon, for Mayor George L. Baker, of Portland.

John I. Easterly, who recently was given a license to practice architecture, has opened an office at 2137 Tiffan road, Oakland. Mr. Easterly would be pleased to receive trade literature and building samples.

Architect John Stafford White, formerly of Oakland and Walnut Creek, and later located at Glendale, has recently been made vice-president in charge of architectural design and construction for Ringling & White, Incorporated, who own and are developing a fifty-acre tract in Okloosa county, Florida. The townsite of Floridale will be the center of their activity.

Architect C. O. Clausen has returned from his trip abroad. An article by him telling of his observations while in Europe, with a number of interesting photographs, will appear in this magazine shortly.

S. A. Jubb, formerly of San Francisco and who has been manager of the Clinton Construction Company in Los Angeles for the last five years, has severed his connection with that company.

Thomas H. Messer of San Francisco, for 22 years a consulting engineer, is the new city manager of Coronado.

Architect Harry Hayden Whiteley has moved his offices from Culver City to 331½ N. Beverly drive, Beverly Hills.

Architect Clarence A. Tantau whose Spanish architecture at Monterey and in the East Bay section, is causing much favorable comment, has been spending his vacation in Mexico, combining rest and recreation with study of some of the old Spanish structures there.

Architect John M. Cooper, 321 River-Strong building, Los Angeles, announces the opening of two new branch offices, one at 720 Alameda Title Insurance building, Oakland, with Charles Webber in charge, and one at Southwest Union Securities Corp., Commonwealth building, San Diego.

Architect M. L. Barker has moved his office from 6667 Hollywood boulevard to 1154 N. Western avenue, Los Angeles.

The newly organized firm of Oltsch, Andrews & Hansen, architects and engineers, has opened offices at 814 Broadway Arcade building, Los Angeles, and will be pleased to receive trade literature, catalogs, etc.

South San Francisco Under Pass

Bids for building the great under pass at South San Francisco on the Bay Shore highway have been received by the California Highway Commission. The lowest bid was for $216,779. The structure will carry the Bay Shore highway under the eight existing tracks of the Southern Pacific and Belt Line railroads and will provide space for expansion of the trackage to sixteen lines of railway. It will have a clear roadway width of forty feet and, in addition, a walk of ample width for pedestrians. The length of the subway will be over 800 feet.

Completion of the under pass will make traversable the first section of the Bay Shore highway, grading of which has been completed by the commission with funds advanced by the City and County of San Francisco.

Architects' League

The Architects' League of Hollywood has adopted a new constitution and by-laws and is preparing to organize its work on a permanent basis. Four classes of membership are provided as follows: Regular members—certified architects or engineers recognized by the city building department; associate members — building designers and architectural and engineering draftsmen; affiliated members—decorators, artists, sculptors or others interested in architecture, allied arts and crafts; honorary members—persons prominent in the practice of architecture and its allied arts. The policy of the League will be determined by a board of directors consisting of five members. The initiation fee was fixed at $10 and dues at $6 a year.

To Build Concrete Garage

Joseph A. Pasqualetti has had plans prepared by Engineer Carl W. Zoller, Humboldt Bank building, San Francisco, for a one-story and basement reinforced concrete garage to be built on the north side of Chestnut street, east of Powell, San Francisco.

Store and Hotel

Plans have been completed by Architect Albert H. Larsen, 447 Sutter street, San Francisco, for a six-story steel frame, brick store and hotel building at Bush and Jones streets, San Francisco, for Richard O'Brien. Estimated cost is $150,000.

COMMUNICATIONS

FEE CUTTING NOT PROFITABLE

Editor The Architect and Engineer,
San Francisco.

Sir:—

I was very much interested in the article in your July number entitled "The Architect's Vanishing Dollar" by Charles Kyson, president of The Architects' League of Hollywood.

Recently I was offered an apartment house job, a six-story, Class A building to cost about $150,000.00 by a Hollywood promoter-builder. The commission offered for complete service, except supervision, was a flat fee of $3000.00 or 2% on the estimated cost of the job. As this was about half what I considered the minimum fee should be, and according to all available cost data both my own and from all other available sources, very much less than the actual cost of production for a thorough and complete service, I declined the proposition. Recently another firm of architects announced the completion of plans for this project and I have no reason to suspect that they accepted any better terms than were offered to me.

This sort of fee competition with which the architects of Los Angeles as well as elsewhere are afflicted, must result in a vast amount of second rate service which reflects on the whole profession and increasingly builds up public prejudice against the employment of architects at all.

One large architect-contracting organization . . . is spending considerable sums of money to circularize select building prospects with the basic idea that the best way to get building service is to eliminate the architect and deal directly with the contractor who will supply very conveniently his own architectural service. The slogan of this concern is "Undivided Responsibility" and to the public this sounds pretty good. However, to the experienced observer, and without any prejudice whatever, it would appear that the real motive behind this policy is the elimination of competition for the contractor. Greater profits are undoubtedly available without the necessity of competitive bidding, which the architect introduces when he acts professionally as the disinterested agent of the owner. The "Dear Public" are not expected to see this point. However, the very ancient principle that "competition is the life of trade" is just as true today as ever, and applies to the building industry as well as the automobile or any other healthy business.

It has been demonstrated time and again that the architect can save to the owner his entire fee by introducing properly regulated contractor's competition, making the other elements of good planning and able design which good architectural service implies, cost the owner practically nothing. "Undivided Responsibility" has nothing on that as a sales argument.

There are many building owners both past and prospective and also contractors, who complain vigorously about the inadequateness of much of the architect's service, but will not admit that the root of the trouble is in their own efforts to grind down in every possible way adequate remuneration to the architect for adequate service.

Architects' service, like any other commodity, can be whittled down in extent and quality to come within almost any fee however small and unfair it may be, but the less that is paid for it, the less it is worth, and inadequate architectural service is about the most expensive thing in the world in relation to the uneconomic and unsatisfactory results obtained.

Every time an architect accepts a fee less than the minimum schedule of the American Institute of Architects, which Mr. Kyson so ably demonstrates as a just minimum by his table of actual cost data, he attacks in the most vital way the integrity of the whole profession, not only his own ability to survive, but makes it measurably harder for all his fellow architects to maintain their position in what should be a dignified, necessary and reasonably profitable profession.

There are many selfish interests in the building industry that would like to see the architect subordinated or eliminated entirely. They realize that they need the skill of the architect but cynically believe that he can be handled by a little adroit "shopping around," and in this way grind him down to almost a starvation basis where he can be kept both tractable and innocuous. Every time a fee is cut this process becomes easier and the profession as a whole loses just that much ground.

It should hardly be necessary to defend the architectural profession against these insidious forms of encroachment. If the architect did nothing else than maintain the element of healthy competition in the building industry by providing proper documents for competitive bidding as the disinterested agent of the owner, he would amply justify the public's confidence and support, not to speak of the other great benefits of good planning and architectural fitness and beauty. We need make no apology for the profession of architecture—its history is both ancient and honorable. The public needs the architect, his business is clearly defined and eminently essential. A fair remuneration for an adequate service is his due.

Let us as architects remember these things the next time we are asked to cut our fees.

Yours very truly,
CHARLES S. COBB,
Los Angeles, Cal. Architect.

Efflorescence

Editor The Architect and Engineer,
San Francisco, Calif.

Sir:

We have noted in your June issue, page 109, article on Efflorescence by Mr. R. P. Brown, reprinted from the American Architect.

In this article Mr. Brown, who by the way is connected with the Lime Association, in describing efflorescence and its causes, in referring to the sources of this trouble, makes the statement "If washed sand and pure water is used with lime and Portland cement for the mortar, the danger is eliminated."

This would appear to place the blame entirely upon the sand or water, whereas, as a matter of fact, as a result of a very thorough series of research studies on this trouble that has been conducted under our research program by the Chemical Engineering Department of Purdue University, we have found that Portland cement is unquestionably, and to a lesser extent some limes also frequently form a source of supply of the troublesome element, that when moisture is present and the conditions right, will cause this unsightly disfiguration of masonry walls.

Yours very truly,
Indiana Limestone Quarrymen's Assn.
(Signed) H. S. BRIGHTLY, Managing Director.

Praise for California Efforts

It is pleasant to know you are appreciated! The following praise of The Architect and Engineer and of the architects on the Pacific Coast, appeared under date of July 19th, 1926, in the columns of a Chicago paper and later the same article was syndicated to fifteen other papers throughout the United States. The author is that splendid American citizen, Mr. F. W. Fitzpatrick, consulting architect and engineer of international fame who, besides practicing architecture, playing golf, tennis, horseback riding, etc., writes daily for a syndicate of middle west newspapers, under the caption "Comments Wise And Otherwise." To quote:

A big-gun New York architect, sitting in my study the other day, picked up a magazine from my table and was leafing it over, at first perfunctorily, then with deepest wonder and interest. It was the California "Architect and Engineer." "Gosh, Fitz," he finally exclaimed, "I didn't know they were doing anything like this out on the Coast." He referred to the very fine illustrations of recent buildings out there.

Now then, that struck me as a most insular remark to make, a confession of utter ignorance of what another part of our country is doing, a species of conceit and satisfaction with one's own section that closes one's eyes to all else.

My friend, busy with his own work and rarely going beyond the confines of his own state or if he does go it is generally to Europe, is but a fair example of what obtains pretty generally East. They ignorantly or purposely ignore everything Western. The Rockies form a very real barrier, an actual geographic division that could as well be the line between any two European countries. No, not that, we do not scrap, but we do keep mighty "toppy" in our relations with each other.

I believe there is something in the California climate, the old spirit of the Spanish Missions, a freedom, a something inspiring, for they really "design" out there, putting force, virility, personality into each building; ginger, where we are satisfied to pin on a bit of orthodoxy.

You will travel far before you see anything better than the Los Angeles city hall. And the office buildings, the churches, the homes are delightful, an inspiration our Eastern architects singularly lack.

And by the way, this same journal, "The Architect and Engineer" of California (that should be found on every architect's desk and in every city and town library) has done much to bring about this happy condition on the West Coast. Against many odds it has contended, ills that beset the path of the architects there, preached a high standard of ethics and morale, fought the architects' battles and is now enjoying well-merited success and can feel that its efforts with and for the architects have borne rich fruit.

Colonel Roebling Passes

In the recent death of Colonel Washington Augustus Roebling the construction industry lost one of its "old masters." He first achieved international fame as the builder of the Brooklyn bridge, completed in 1883, which was at that time the longest suspension bridge in the world. This structure, unique in bridge building, was regarded as a remarkable achievement in engineering skill.

The contract was originally undertaken by his father, John A. Roebling, who was injured while making a survey of the bridge site and died sixteen days later. At the time of his father's death, construction had not started, and only plans general in character had been formulated. When faced with the entire responsibility of the structure, and before undertaking the foundation work, Colonel Roebling went to Europe and made a careful study of pneumatic foundations.

During actual construction he never left Brooklyn for an hour, but personally supervised all important preliminary work, frequently making visits at night. This devotion to his work impaired his health to such an extent that late in 1872 he was obliged to cease his visits to the work, but continued personal supervision over operations from a wheel chair on the roof of his home, by the aid of powerful field glasses.

Fearing that he might not live to see the completion of the work, and realizing how incomplete were the plans and instructions, he spent the winter in drawing and writing; these papers contained the most minute and exact directions for making the cables and the erection of all the complicated parts of the superstructure. This work caused a further break in his health and in the spring of 1873 he was forced by his physician to abandon work and take a six months' vacation in Germany.

Upon his return he assumed active supervision of the work and when the bridge was completed it was said that no greater project had ever been conducted by a man under greater disadvantages.

Upon completion of the Brooklyn bridge he devoted his time to the direction of the Roebling wire manufacturing business at Trenton, N. J.

Pioneers' Night Enjoyed by American Association of Engineers

ON Thursday evening, June 24, Los Angeles Chapter celebrated "Pioneers' Night," a custom inaugurated this year by President Olmsted and which he hopes will be made an annual event. Several of the prominent early members of the Engineers and Architects' Association gave interesting reminiscences of the old association which was the first engineering society in Los Angeles, and which later became Los Angeles Chapter of A. A. E. In addition to President Olmsted, who was a former president and secretary of the old organization, talks were made by Messrs. A. M. Eddleman, Henry J. Dockweiller, H. C. Brandt, S. G. Bennett, F. E. Trask and H. C. Osborne. Regrets at being unable to attend the meetings were received from William Mulholland, J. B. Lippincott, Samuel Storrow and others. The younger members were greatly interested in the stories of the former days, and the efforts of these men to keep alive an engineering organization in spite of difficulties and discouragements, will be an inspiration to the present membership to strive even harder than they have in the past to advance the aims and ideals of the Association.

The Chapter was pleased to learn that Donald M. Baker, retiring district director, had been elected National second vice-president of the Association. Mr. Baker is also a director of Los Angeles Chapter, and for a number of years has worked indefatigably in the interests of the Association both locally and nationally.

J. M. Buswell of Fresno, who succeeds Mr. Baker as National director, has also been a consistent worker for the Association on the Pacific Coast and Los Angeles Chapter is looking forward to a closer acquaintance with him as he assumes the duties of director of this district.

Contractors' Safety Responsibility*

By E. M. Scofield

SOME years ago a man sat in our eastern office looking down on John Wannamaker's great store and expressed most emphatic condemnation of John because he paid his girls so small wages. According to him, John was personally culpable for not paying respectable wages. But when he was asked to face the facts and figure out how long John was likely to last if he paid twice the wages of his competitors, he was constrained to admit that the question of wages was a larger question than the good will of the individual employer.

In a similar way, the question of compensation is a larger question than the good will of individual employers. There is no justice in handicapping the employer of decent instincts who likes to take care of his men when injured, by placing him in competition with the employer who is willing that the county should attend to those matters for him. That was what happened in the days before compensation insurance was compulsory, when competition and the possibility of common law liability forced many decent employers to pay the lawyers instead of the injured. Compensation laws have corrected that evil. They require all employers, regardless of good will, to figure on this expense. They make the industry responsible for its injured, rather than the county or the friends of the injured.

The cost of compensation insurance in the building industry is approximately 1.75 per cent of the total cost of the work. This is divided about as follows: General contractor .50 per cent, material men .25 per cent, subcontractor 1.00 percent. In 1924 the total cost to the building industry in Los Angeles county was about $4,000,000, and in California about $8,000,000.

The average rate in large buildings is about 4.53 percent of the cost of labor employed, modified by the experience of the individual contractor. In 1924 our rate was 61 percent of the list cost. This saving of 1.78 percent or $1,780 per $100,000 of labor employed in our case goes to the owner, but it represents the financial return for efforts at accident prevention.

There are some accidents that are not humanly preventable. These are the only ones that ought to be called "accidents;" the rest are crimes. All that the careful contractor can do is to hold his accidents down to the true "accident" class.

To this end the primary requisite is cleanliness. You have to haul away your refuse anyway, therefore haul it away promptly and get the advantage of reduced accidents and also reduced cost; for nails are one of the principal sources of accidental injury, and there is no money in paying men for climbing over refuse.

Next in importance is the question of openings, and hatches, and stairs. A man who would not back into an open hatch is too little interested in his work to be a good investment. Keep the hatch covered or railed so that the man can keep his mind on his work. The same observation applies to scaffolds and the rails and covers for same.

*Abstract of an address before the Construction Safety School, Los Angeles.

Commander Elsberg Tells Engineers How Sunken Submarine S-51 Was Raised

N Friday evening, July 23, at the Engineer's Club, in New York City, an assemblage of many interested his engineering and scientific problems ned with Commander Elsberg, and his sistant, Lieut. Kelly, to listen to his planation of the difficulties which he et in raising the submarine S-51.

For two hours Commander Elsberg ld his audience by a story that was as amatic as it was educational. Com- ander Elsberg told of burning away rtions of the steel deck of the sub- arine with torches 135 ft. under water; washing tunnels with a fire stream rough hard clay under the submarine, e tunnels only large enough for a diver lie prone in; of one of these tunnels ving in back of the diver and of his ashing space in which to turn and then ashing his way out through the cave-in.

Of particular interest to engineers and onstruction men who have at times used ement grout in their construction work as Commander Elsberg's description of aking the undamaged compartments of he submarine tight so that the water ight be expelled by compressed air. To ffect this, the speaker pointed out that cores of valves inside of the submarine ad to be closed by divers. This was one after a thorough schooling and re- hearsal on a sister ship, the S-50. Two arge flap valves on 24-inch ventilating ducts offered a serious problem, as it was mpossible to fasten these valves closed against an internal air pressure.

After all attempts to seal the two arge valves by fastening the flap shut ad failed, it was decided that they could e sealed only by filling them from the surface with some material which would solidify and make them air tight. Experiments under simulated conditions with a number of materials, including the ordinary cements in common use, showed these materials to be not entirely satisfactory or sure of success. Experiments with quick hardening lumnite cement showed that this war time product would harden quickly under the deep sea conditions involved. After Commander Elsberg determined this, divers inside the submarine tapped holes in the large valves and attached 1¼-inch valve connections for a heavy rubber hose leading out of the submarine and up to the rescue ship "Falcon." On board the "Falcon" the lumnite cement was mixed with water in proportions of two of cement to one part of water in a heavy steel tank. The tank was then closed and 150 lbs. of air pressure applied to force the grout through 250 feet of hose to each of the flap valves.

After the cement had been allowed to harden for two days, it was found that the undamaged compartments were then air tight and the water in them was readily expelled by compressed air. This furnished sufficient buoyancy to make it possible to lift the submarine with eight large pontoons. Commander Elsberg explained that if the compartments of the ship could not have been made air tight, it would have been impossible to have provided sufficient buoyancy through the use of pontoons to have moved her.

Commander Elsberg paid very high tribute to the morale, faithfulness and heroism of the personnel, especially the divers, who were all recruited from the enlisted men of the Navy. Commander Elsberg himself was frequently in diver's suit inspecting and directing the work in the submarine itself.

Six Months Building

Although building in Southern California for the first six months of 1926 fell twenty-one millions short of that for the corresponding period last year, the record for the cities outside Los Angeles held up close to the figures for the first half of 1925. For the first half of the current year 47 cities, including Los Angeles, reported building permits issued with an estimated valuation of $122,642,627, as compared with $143,689,201 for the corresponding period last year. Forty-six cities outside Los Angeles reported permits issued during the first six months of 1926 with an estimated valuation of $59,481,232, as compared with $60,513,744 for the corresponding period in 1925.

An idea of the trend of building through the first half of the year may be obtained from the following reports by months with the records for both 1926 and the previous year:

	No. Cities	1926	1925
January	55	$16,848,336	$21,612,994
February	55	16,622,823	19,266,265
March	57	26,320,935	25,449,741
April	55	22,095,254	24,567,331
May	45	19,979,107	25,957,839
June	53	22,042,680	24,726,694

Mueller Addresses Plumbers

Adolph Mueller, president of Mueller Company, Decatur, Ill., addressed a meeting of more than fifty plumbers from San Francisco and adjacent cities, Friday evening, June 11. Mr. Mueller stressed the idea that progress in the industry must come from within. Service, quality and efficiency, as pictured in the Sanitation Development League symbol, were presented as of major importance to the plumbing industry.

NEW BASEMENT SASH WITH PINLESS HINGES

New Type of Basement Sash

A new time-saver for the builder has been announced by the manufacturers of Fenestra steel windows, in the form of a basement window with pinless hinges which make the sash instantly removable for glazing. With no hinge-pins to remove or replace, the ventilator simply lifts out. At the same time, it cannot be unhinged from outside the building. This can be accomplished only from the inside, after the window has been opened as shown in the accompanying picture.

"Steel basement windows have always been time-savers for the builder," writes N. T. Jacobs, manager of the company's merchandise sales department, "because they come completely assembled and do not require fitting or the attaching of hardware. The new hinges make them even easier to install, by making glazing more simple.

"Incidentally, glazing clips are unnecessary with the Fenestra basement window. The glass rests on the muntins when the sash is open, taking all strain off the putty. The glass stays firmly in place without the clips, and dispensing with the latter effects a further economy of time."

A folder describing the new basement window will be sent free upon request to the Detroit Steel Products Company, 2251 East Grand boulevard, Detroit, Michigan, or any of the Pacific Coast offices.

Promoted to Coast Manager

F. M. Randlett has been promoted to the position of Pacific Coast manager of Robert W. Hunt Co. Mr. Randlett was formerly district manager in the Pacific Northwest, with headquarters at Portland, Ore., and Seattle, Wash., and previous to that time was for many years chief engineer of the Water Department of Portland, Ore.; he served previously in the engineering department of the New York, New Haven & Hartford R.R. and with Stone & Webster, Inc. William B. Gester, who established the San Francisco office of Robert W. Hunt Co. in 1903, continues his association with that company in the capacity of consulting engineer, with headquarters at San Francisco.

Says Magazine is Useful

Architect William K. Bartges has recently opened an office in the Mercantile Bank building, Oakland. In renewing his subscription to The Architect and Engineer, Mr. Bartges says: "I have taken your magazine for a good many years and find it a very useful journal. Your articles and photographs are very good. More power to you!"

BOOK REVIEWS

Edited by
CHARLES PETER WEEKS

New Building Estimator's Hand Book, by Wil-m Arthur, 4th edition, published by the Scien-ic Book Corporation, 15 E. 26th street, New ork. Price $6.50.

For preliminary estimates, an archi-ect is in better position to give correct formation than the contractor, due to ie fact that he can, in visualizing the nished building, determine the location id quantity of the different finishing aterials that enter into its cost, and rchitects would be much better off if ey did more of this work instead of pending upon the general contractor. o do this, however, it is necessary for em to have correct information as to ie cost of materials, and the time re-ired in their manufacture and installa-on. The above book is the latest pub-cation on this subject and is full of luable data.

The author has made a genuine con-ibution to the building trade by sup-lying a compact and authoritative guide, resented in a way that makes it usable nd invaluable to every contractor, uilder and engineer. There is, perhaps, o writer better qualified as an authority n this subject than Mr. Arthur, since is experience has covered a great num-er of years in building estimating, a rge share of which has been for the ading railroads of this country.

In every sense the "New Building stimators' Handbook" is an under-tandable, complete and up-to-date guide hat may truthfully be regarded as a orth-while contribution to the field of arpentry and building.

Stresses in Simple Structures—by Leonard C. rquhart and Charles E. O'Rourke, Department f Structural Engineering, Cornell University. ublished by McGraw-Hill Book Co., Inc., 370 eventh avenue, New York. Flexible, 6½x9 inch, p. 1,080; 275 tables and 450 illustrations. Price 7.00 net.

As the title implies the book deals ith the fundamentals of stress calcula-ion in simple structures. Both graphical nd analytical methods are shown in ost cases. While the relation between raphical and analytical methods is em-hasized, the methods have been separ-ted so that each may be taken up eparately. Both methods are illustrated y actual numerical problems.

The table of contents includes seven-een interesting chapters, as follows: teel Roof Trusses and Mill Buildings, teel Office Buildings, Steel Highway ridges, Steel Railway Bridges, Retain-ng Walls, Bridge Abutments and Piers, imber Bridges and Trestles, Steel Bins, teel Grain Elevators, Steel Head Frames nd Coal Tipples, Steel Stand-Pipes and Elevated Tanks on Towers, Self-Support-ing Steel Stacks, Structural Drafting, Estimates of Structural Steel, Erection of Structural Steel, Engineering Mate-rials, Structural Mechanics, and The De-sign of Steel Details.

Architectural Construction— Volume Two, by Walter C. Voss, S. B., and Edward A. Varney, S. B., published by John Wiley and Sons, Inc., New York. Price $6.50.

This book covers in detail mill con-struction and other work combining wood, steel and concrete. This field has been covered in other works, but not so completely.

The architect who aims to become reasonably well versed in the funda-mental principles of structural design and detail will not so arrange a plan as to penalize the construction, but will be able to sense the usual economic prin-ciples and govern his layout accordingly. Likewise, the engineer should become as well versed in the general practice of the architect as possible, in order that he may wisely guide those features of the design which seriously affect his efforts toward economy, without any sacrifice in the beauty or serviceability of the building.

Permutit Company Wins

The United States patent 1195923 is-sued to Robert Gans and owned by The Permutit Company, New York, is a basic patent covering apparatus for softening water by the use of zeolites. It has been sustained by the following courts:

1. U. S. District Court, Western Dis-trict of New York.
2. U. S. Circuit Court of Appeals, Sec-ond Circuit.
3. U. S. District Court, Southern Dis-trict of New York.
4. U. S. Circuit Court of Appeals, Sixth Circuit.

Thus this patent has been sustained by two Federal District judges and by two Circuit Courts of Appeals. In the decision of June 8th, 1926, of the Court of Appeals, Sixth Circuit; it is stated in part:

—"rarely is there a case where a new art and industry are founded solely upon and grow en-tirely from a patent, so clearly as in this case."

—"it is not to be denied that the entire com-mercial activities of all makers in this country have grown out of the commercial exploitation here by the owners of the patent."

—"it is clear that the patent should be treated with all permissible liberality, and that the courts will go as far as they rightly can, in the way of overlooking technical defects and over-ruling de-fenses which are not clearly fatal."

So far suits have been brought against three manufacturers employing three different designs of apparatus, and in each case the apparatus has been held to infringe the above patent.

Copies of all the decisions may be ob-tained from The Permutit Company, 440 Fourth avenue, New York, N. Y.

A. F. Edwards, President
J. A. Mackenzie, Secretary

J. Rubiolo, Asst. Mgr.
D. A. Batsford, Asst. Mgr.

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Electric Dryer Proves a Success

Electrical appliance for the office building, the department store and home have been so highly perfected that today they are both economical and practical. Electricity is now being used for a multitude of purposes and new uses are being developed almost daily.

Sani-Dri, the new electric hand and face dryer, recently placed on the market by the Chicago Hardware Foundry Company, seems to meet every demand. The entire resources of this 40-year-old organization's $2,000,000 plant have been used in the perfection of this product. Simple and almost automatic in its operation, a warm breeze forced upward dries the hands and face through rapid evaporation, leaving the skin soft and smooth. The installation is economical, the machine is sturdily and neatly constructed, and makes a splendid appearance in the wash room.

Western offices of the Chicago Hardware Foundry Company for the distribution of Sani-Dri, have been established in the Rialto building, San Francisco. The eleven far Western states and British Columbia will be under the direct supervision of this office with Mr. E. S. Hewitt as general manager of the Pacific Coast Division. District offices for San Francisco and the California territory, in charge of Messrs. H. D. and Harold E. Saville, will also be located in the Rialto building. Los Angeles offices have been opened in the Commercial Exchange building with Mr. Chester A. Arthur district manager. The Seattle office will be in charge of Mr. W. E. Dando, 722 Fourth avenue. Eastern Washington, Idaho and Montana are covered from the Spokane office, 415 Lindell building, in charge of District Manager W. B. Wyssman. The Valley Electrical Supply Company of Fresno will handle sales and service in the San Joaquin Valley territory. J. F. Warder, with offices at 910 Ninth street, Sacramento, is in charge of the Superior California district. Offices will be immediately opened in Portland, Denver, Salt Lake City and El Paso.

Residence Work

Architect Henry H. Gutterson has completed plans for a Spanish type residence on Euclid avenue, Berkeley, for Mr. Lee Foulds, estimated to cost $20,000. Mr. Gutterson has also made plans for a $17,000 home in Hollywood, for Dr. Albert Vieille.

Pump Governors
Oil-Burner Governors
Reducing Valves
Safety Valves
Oil Valves
Blow Off Valves

Boiler Feed Valves
Vacuum Pump Governors
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The ARCHITECT and ENGINEER

SEPTEMBER 1926

Industrial Architects

are Invited to Consider a New Paint Principle—

"Leafing"

PLANT executives in all sections of this country are taking a lively interest in the development of Aluminum Bronze Powder as a paint pigment for industrial uses.

In comparison with other paints Aluminum Bronze Powder—mixed with a suitable vehicle of oil or varnish—offers many advantages, both for indoor and outdoor use in mills and factories.

Aluminum Bronze Powder is made of thin flakes of pure aluminum metal.

These flakes, unlike other pigments, "leaf" together when brushed or sprayed on factory walls, roofs, tanks, towers, and iron or structural work.

They form a continuous coating of Aluminum that is rustproof, waterproof, durable and very pleasing in appearance.

For interior work, Aluminum Painted Walls reflect a softened light that is kind to operators' eyes. These walls are easy to clean and are little affected by fumes incidental to many manufacturing processes.

A booklet—"Aluminum Paint"—sets forth for your consideration the technical and practical properties of this new paint principle.

We will be glad to mail it to you upon request.

Aluminum Company of America

2414 Oliver Building, Pittsburgh, Pa.

OFFICES IN EIGHTEEN PRINCIPAL AMERICAN CITIES

Aluminum in Every Commercial Form

Pacific Coast Office—Rialto Building, San Francisco

Aluminum Paint

Brief Facts About Aluminum Paint

—Consists solely of pure Aluminum Bronze Powder mixed with a suitable vehicle of oil or varnish.

—Flakes of powder "leaf" together when paint is applied, forming rustproof—waterproof—weatherproof coating.

—Protects longer and stays clean longer than ordinary paints.

—Can be sprayed or brushed on as desired.

—Costs no more—first and last—than other kinds of paint.

—Sounds a new note in factory treatment.

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the ARCHITECT & ENGINEER

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CENTRAL NATIONAL BANK BUILDING, OAKLAND
GEORGE WILLIAM KELHAM, ARCHITECT

The
ARCHITECT
and
ENGINEER

VOL. LXXXVI SEPTEMBER, 1926 Number 3

The New Central Bank Building, Oakland

By F. L. TOMASCHKE

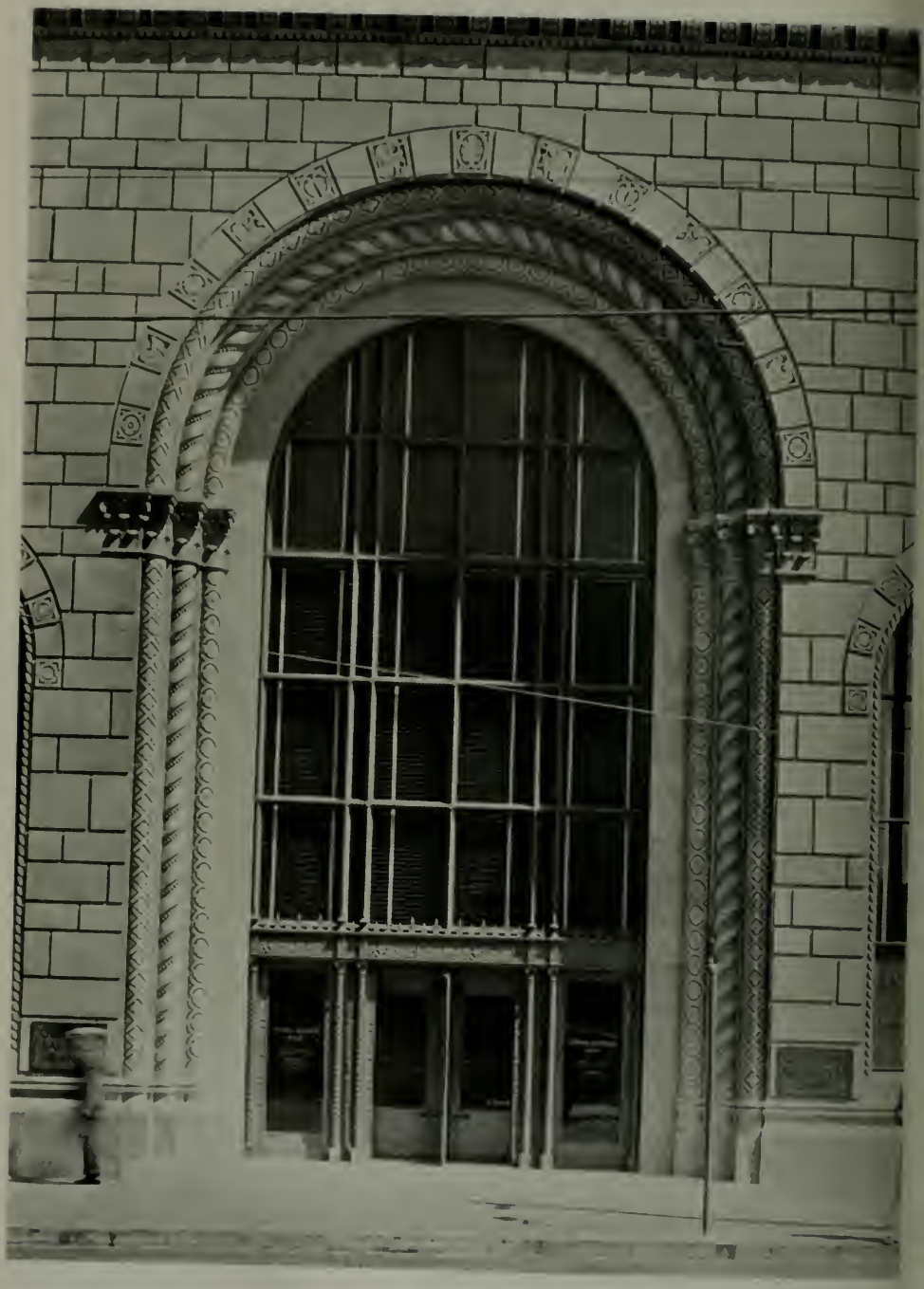
THE new home of the Central National Bank and the Central Savings Bank of Oakland is architecturally one of the most substantial and handsome banking structures on the Pacific Coast, embodying as it does the latest and most approved principles in design and equipment. The structure is a fifteen-story combined bank and office building located at Fourteenth and Broadway, the heart of the business and financial district in Oakland. Basement, main floor and mezzanine floors are occupied by the banking quarters, while the remainder of the building is devoted to office suites.

Dignified simplicity characterizes the main entrance to the banking rooms on the Broadway frontage of the building. Entrance lobby and public space extend the full length of the banking rooms on the north side and occupy the front of the building, as well. Indiana limestone was used as interior finish for the wall of the banking quarters, while the ceiling is decorated after the Italian manner. The floor is of Roman travatine with Mosaic insets.

Quarters occupied by banking rooms are nearly 150 feet long and 100 feet wide, this entire area being taken up by the bank, with the exception of a small space allotted to the lobby of the main building. Savings bank services are available at the right and left of the main entrance, with the commercial departments on the left and at the rear of the main banking rooms. Officials of the National Bank occupy offices at the right of the banking lobby.

Customers of the National Bank find every normal convenience and service at their alphabetical window, as teller, bookkeeper and records are all allocated to one spot for prompt and accurate functioning. In the Savings Bank, service is according to account number, the system installed insuring quick and accurate service.

Trust department and other services are located on the mezzanine floor, together with a practically sound-proof room in which is located the operating department. The credit department occupies spacious



BROADWAY ENTRANCE, CENTRAL BANK, OAKLAND
GEORGE WILLIAM KELHAM, ARCHITECT

LOBBY, CENTRAL SAVINGS BANK, OAKLAND
GEORGE WILLIAM KELHAM, ARCHITECT

quarters on the second floor. The directors room, paneled in rich mahogany, is located on the second floor also. Special quarters have been installed for women employees on the second floor, where lunches may be prepared.

In the basement, eight modern concrete and steel vaults have been constructed. The safe deposit box vault, the largest of these vaults, is lined with polished steel and will provide 20,000 boxes when needed. Vaults for coin storage, package storage and for bank use are located in the basement, also. About 50 booths of mahogany have been installed for the convenience of deposit box holders, and two conference rooms have been provided for the use of customers.

In addition to the banking rooms, the fifteen-story building contains

REAR LOBBY, CENTRAL BANK, OAKLAND
George William Kelham, Architect

more than 400 office suites. Over 2500 tons of structural and other steel were used in the construction of the building, which towers 235 feet above the street level. A modern ventilating system has been installed in which air is driven through an oil bath by a large fan before being admitted to the banking rooms and quarters. A sub-basement was constructed to house necessary machinery for operating the building.

Five modern high-speed elevators provide rapid transportation from basement to the top floor. These elevators are equipped with automatic self-leveling devices and have self-closing and self-opening doors.

Architect Kelham, in designing the building and banking rooms, created a structure of classical beauty and combined with it practical

utility. The banking rooms, especially, are designed to expedite the execution of banking work and to handle a maximum number of depositors and customers without crowding and inconvenience to the public.

Joseph F. Carlston, under whose administration the banks have had their greatest period of expansion, and who is the present head of the institution, was inaugurated president on May 5, 1909. An era of expansion followed. In August, 1912, the Bank of Germany was taken over. On May 12, 1913, the organization assumed control of the Telegraph Avenue Savings Bank, which it operated and still operates. Then came the absorption of one of the oldest financial organizations of Oakland, the historic Union Savings Bank. This event marked the month

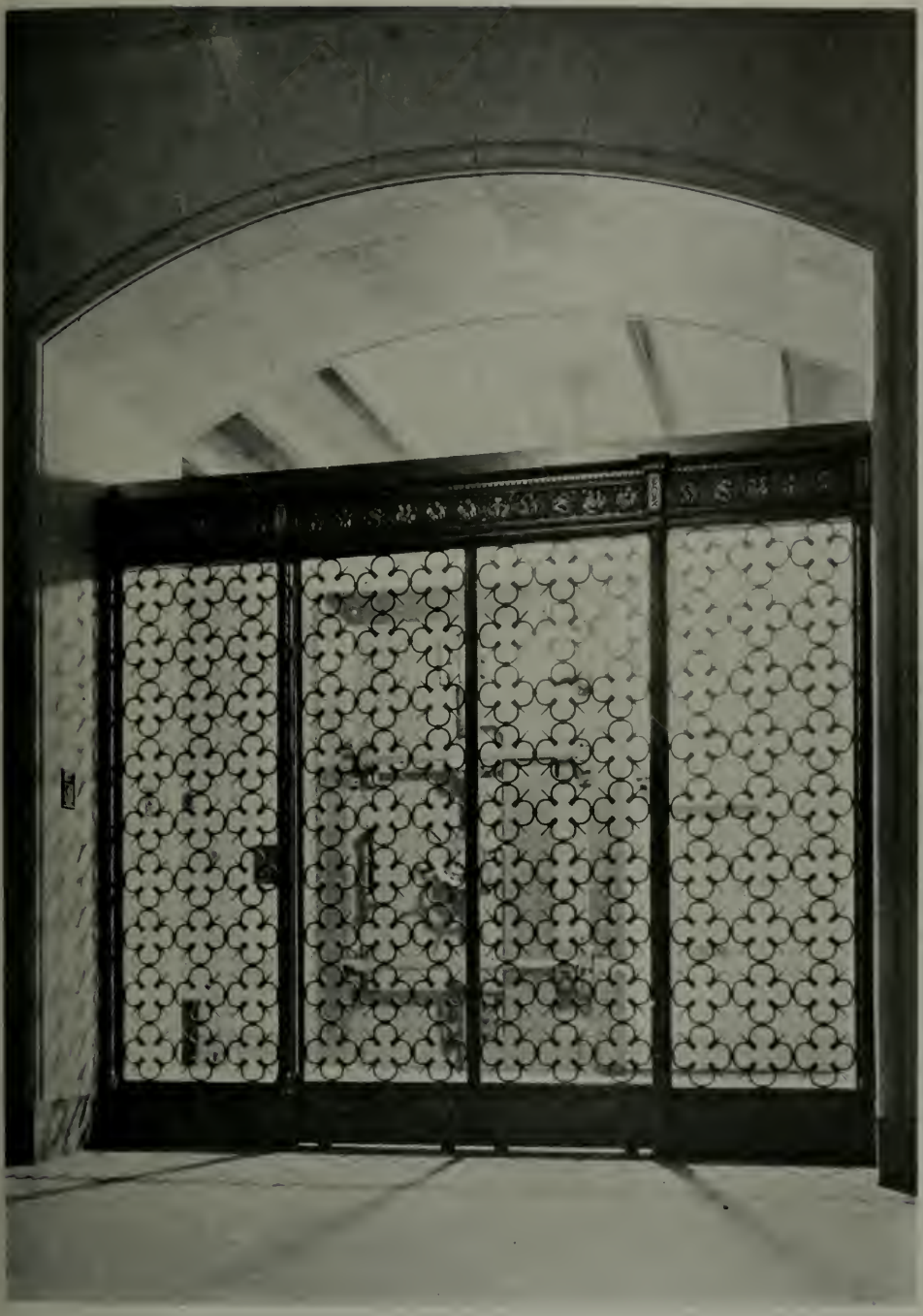
MAIN BANKING ROOM, CENTRAL BANK, OAKLAND
George William Kelham, Architect

of November, 1914; it was followed by the addition in the following year of two more prominent banking houses, the Western Commercial and Savings Bank and the Bank of Commerce. The latest acquisition was the State Savings Bank, the control of this leading banking house being assumed on March 31, 1923.

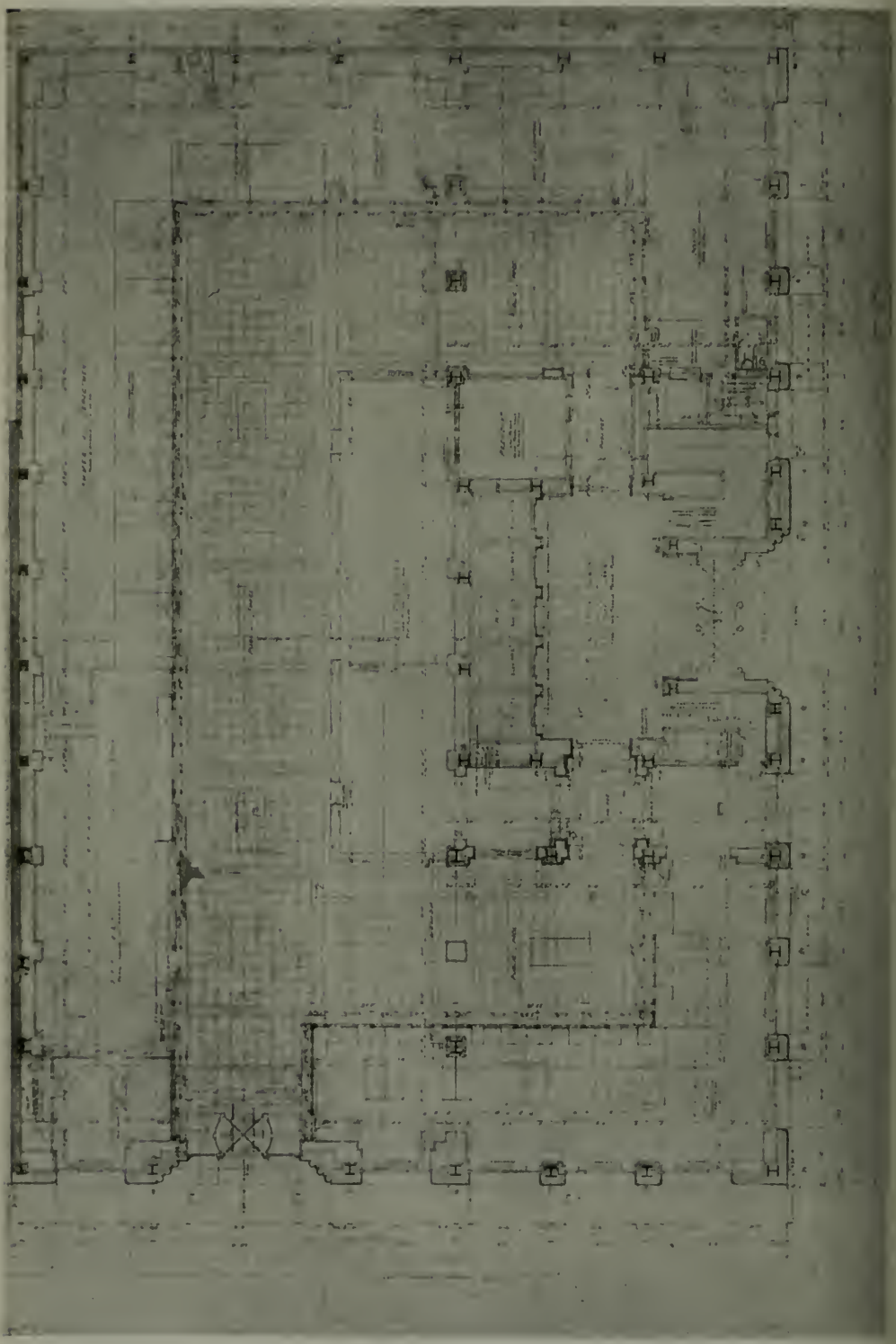
The period of readjustment that followed the great San Francisco fire of 1906 served to launch Oakland on a current of swift growth. The Central banks played an important part in the major activity that followed.

Walter J. Mathews was associated with Mr. Kelham as architects of the building and the Dinwiddie Construction Company were the builders.

PRESIDENT'S OFFICE, CENTRAL BANK, OAKLAND
GEORGE WILLIAM KELHAM, ARCHITECT



GRILL DOORWAY, SAFE DEPOSIT DEPARTMENT, CENTRAL BANK
GEORGE WILLIAM KELHAM, ARCHITECT



BANK BUILDING, CENTRAL BANK, OAKLAND

ELKS LODGE BUILDING, VENTURA, CALIFORNIA

TWO FRATERNITY BUILDINGS

In Southern California

DESIGNED BY

C. H. RUSSELL COMPANY, *Architects*

ELKS LODGE BUILDING, SANTA MONICA, CALIFORNIA

BUILDING FOR DR. CHARLES STRUB, SACRAMENTO
F. EUGENE BARTON,
ARCHITECT

HOUSE OF FLOYD R. BEKINS, FRESNO
Claude B. Barton and F. Eugene Barton, Associate Architects

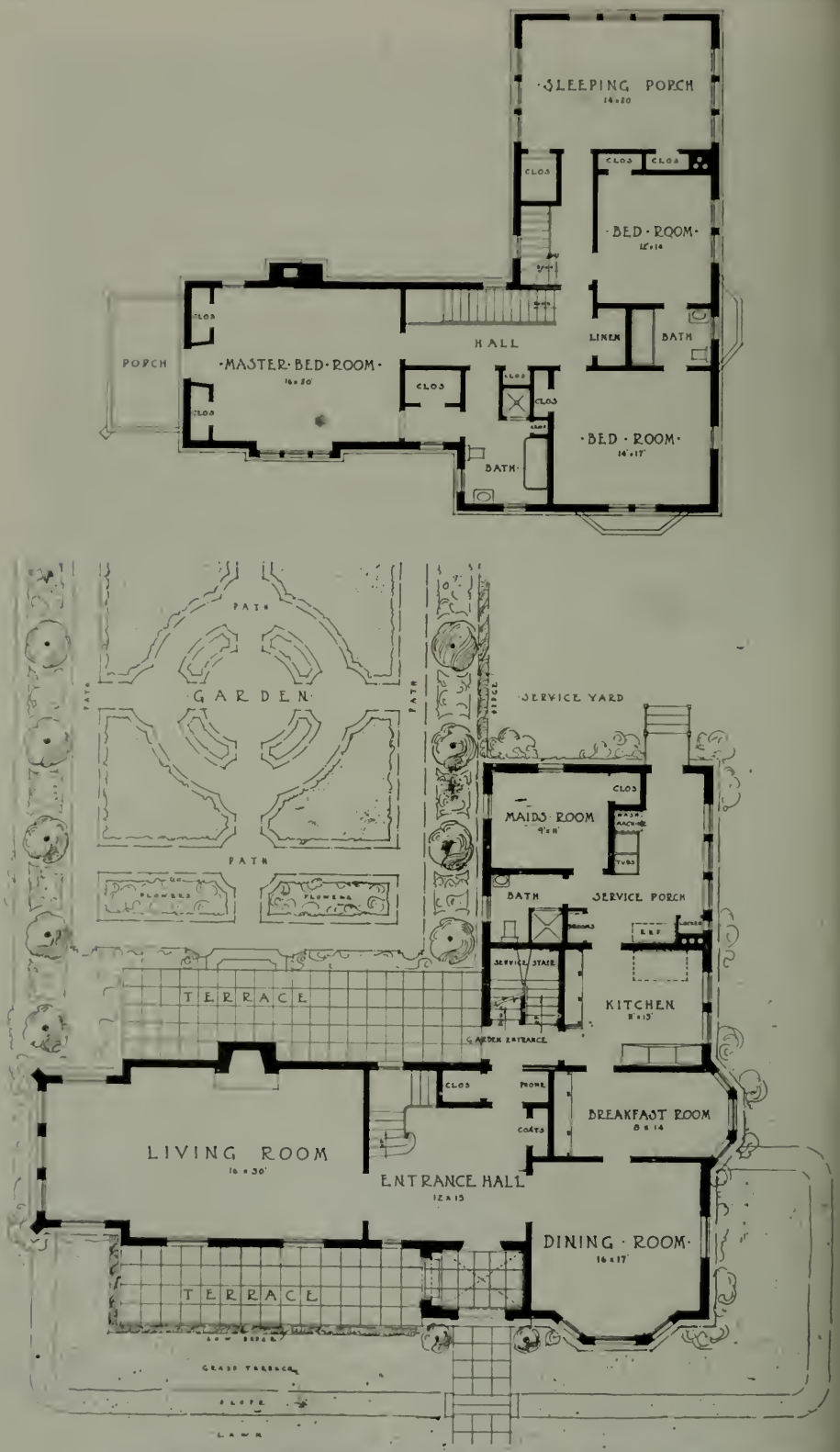
Recent Work of Claude B. and F. Eugene Barton

THE accompanying pictures are typical of some of the recent work of Architects F. Eugene Barton and Claude B. Barton of San Francisco and Oakland. The perspective of the building for Dr. Charles Strub shows a well studied and substantial office building now being erected in Sacramento and to be occupied by the California State Highway Commission and Bureau of Motor Vehicles. The structure covers ground area 160 x 160 feet. The walls and floors are constructed of reinforced concrete of the flat slab type. The partitions are hollow tile. There will be three high speed Spencer-Westinghouse elevators. All the corridors are finished with rubber tile floors and marble base.

The facade of the Morton store in Oakland is a departure from the stereotyped plate glass front, having an interesting arcade designed in the Italian Renaissance. The entire front is a cream tone terra cotta with marble floor and decorated vaulted ceiling.

One of the interesting homes shown is an English cottage at Fresno for Floyd R. Bekins. The plan has been ingeniously worked out to meet the climatic conditions of the country; the north and south terraces and the bedrooms have all been placed in a manner calculated to give the best possible ventilation and protection from the elements. The home is equipped with an electrically operated refrigerator and cooling system.

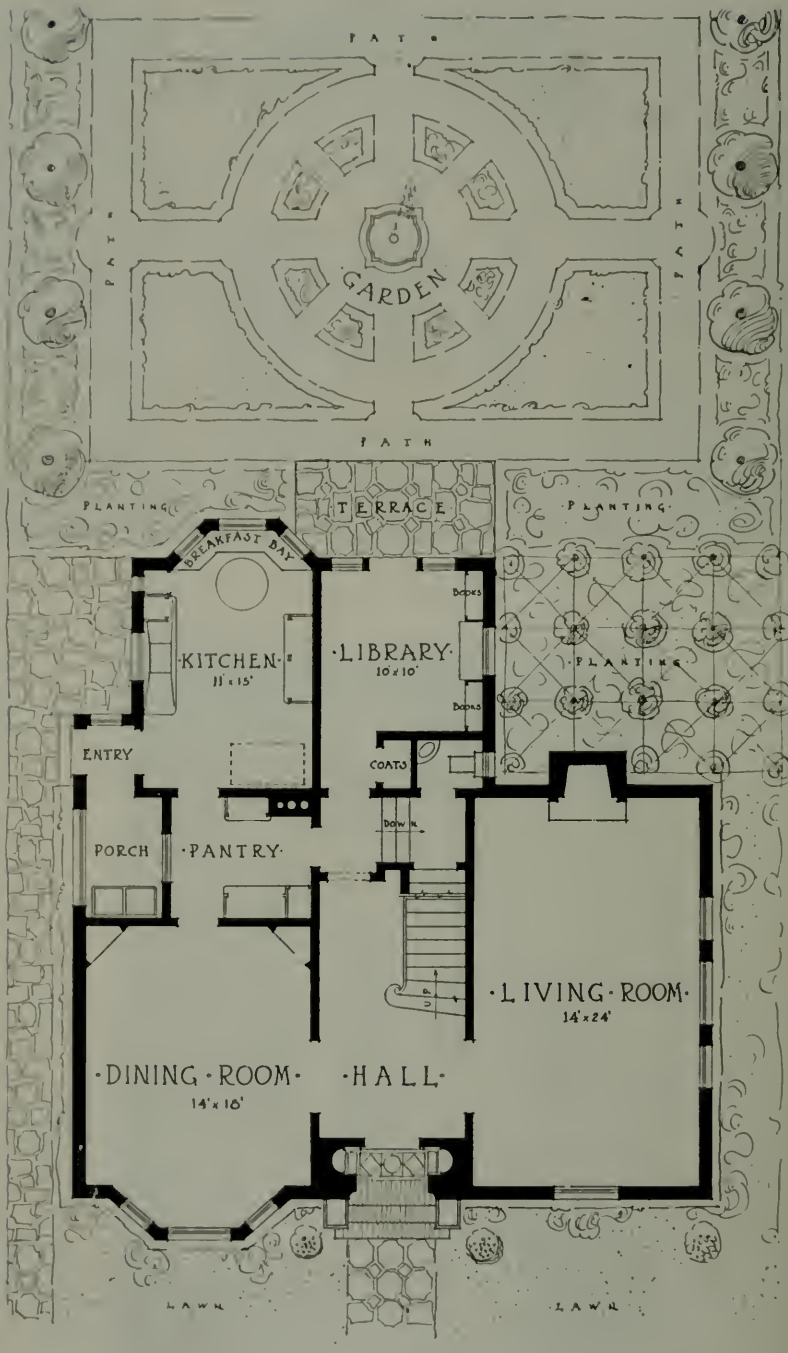
The interiors of an Oakland apartment are interesting. The grilled doorways give a touch of refinement not always in evidence in moderate cost apartment houses.



FIRST AND SECOND FLOOR PLANS, HOUSE OF FLOYD R. BEKINS, FRESNO
CLAUDE B. BARTON AND F. EUGENE BARTON, ASSOCIATE ARCHITECTS

STORE OF H. MORTON CO., OAKLAND
Claude B. Barton and F. Eugene Barton, Associate Architects

STORE OF H. MORTON CO., OAKLAND
Claude B. Barton and F. Eugene Barton, Associate Architects



FIRST FLOOR PLAN, HOUSE OF DR. CHAS. E. PETERS
F. EUGENE BARTON, ARCHITECT

HOUSE OF DR. CHAS. E. PETERS, PIEDMONT
F. Eugene Barton, Architect

DINING ROOM, HOUSE OF DR. CHAS. E. PETERS, PIEDMONT
F. Eugene Barton, Architect

SECOND FLOOR PLAN, HOUSE OF DR. CHAS. E. PETERS, PIEDMONT
F. Eugene Barton, Architect

DINING ROOM, APARTMENT HOUSE, OAKLAND
F. Eugene Barton, Architect

ABOVE—DOOR DETAIL, APARTMENT HOUSE, OAKLAND

F. EUGENE BARTON, ARCHITECT

HALL DETAIL, APARTMENT HOUSE, OAKLAND

F. EUGENE BARTON, ARCHITECT

RESIDENCE OF STANLEY FORBES, ESQ., PALO ALTO

SOME INTERESTING GRILL WORK

in the Residence of

DR. MORGAN, Honolulu, T. H.

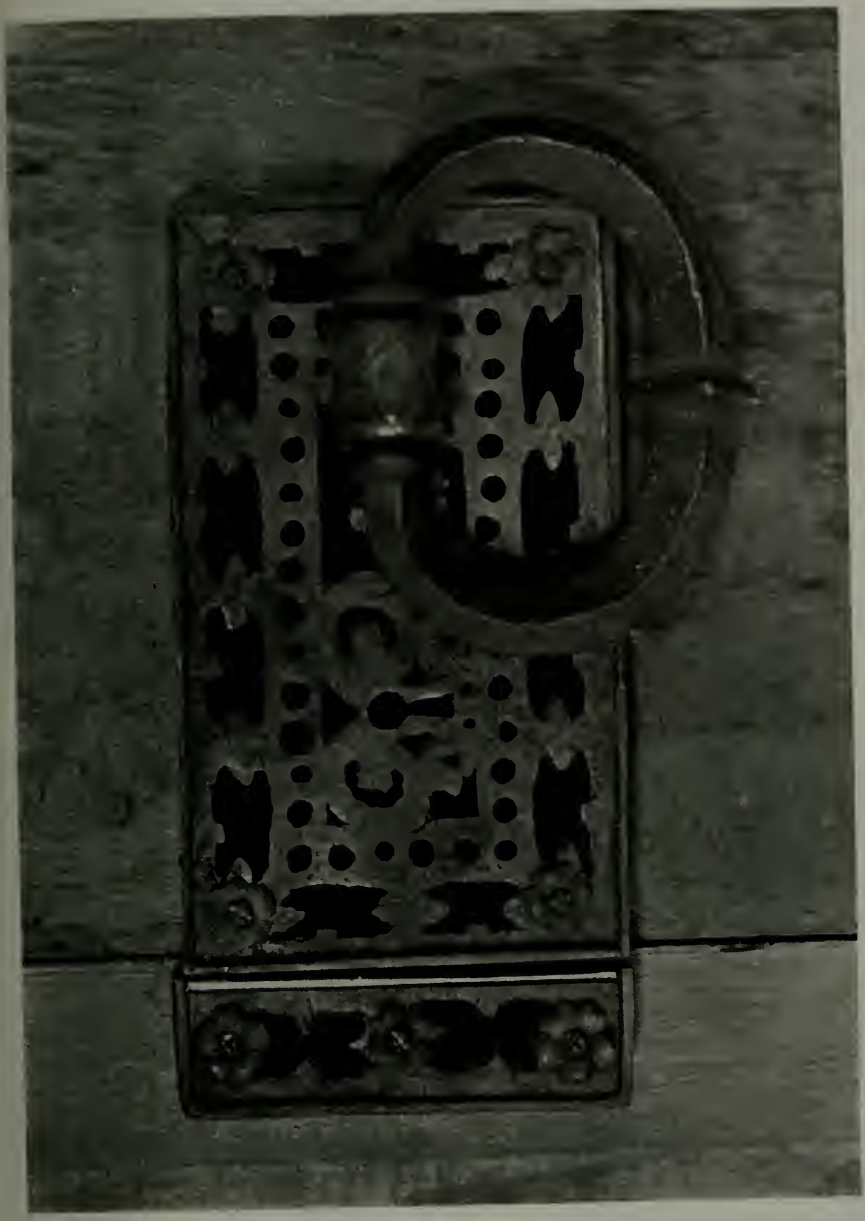
HART WOOD, *Architect*

WINDOW GRILL

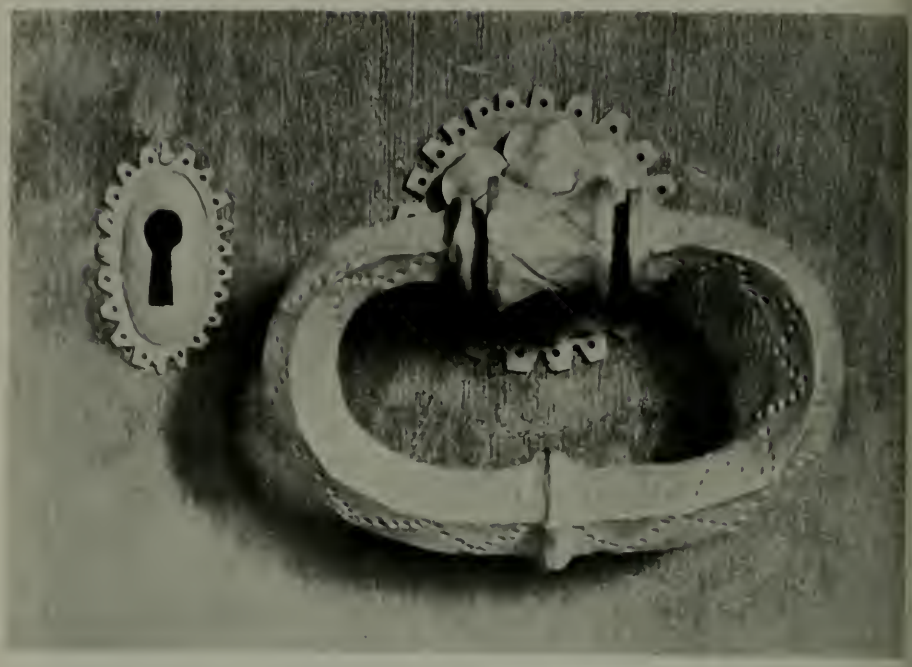
WROUGHT IRON STAIR RAIL

ENTRANCE GRILL

WROUGHT IRON DOOR HANDLE



WROUGHT IRON RIM LOCK



WROUGHT IRON HARDWARE

LIVING ROOM, DR. MORGAN RESIDENCE, HONOLULU
Hart Wood, Architect

Hearing in Auditoriums

*Two Papers. I—Effects of Noise**

By VERN O. KNUDSEN, Ph. D.

NOISE and excessive reverberation are quite universally recognized as the chief sources of poor acoustics in most auditoriums. Everyone is familiar, in a general manner, with the harmful effect of noise upon the hearing of speech or music. There does not appear to be the same unanimity of opinion regarding the harmful effect of reverberation. Most architects and builders are familiar with the excellent experimental work upon reverberation by the late W. C. Sabine of Harvard. Many have utilized his results in the design of auditoriums which have satisfied the most severe acoustic requirements.

More than a few architects, however, are possessed of confused notions about the effect of reverberation upon the acoustics of auditoriums. The following quotation from a letter the writer recently received from a prominent architect will illustrate this confused state of mind.

" . . . Most of the present day work in the field of acoustics seems to be based upon either one of two possible hypotheses, namely (1) that perfect acoustical results are to be found in perfect and complete sound absorption; and (2) that perfect acoustical results can be obtained only by the proper designing of reflecting surfaces and by proper sound reinforcement, with partial, low-efficiency sound absorption.

"These two hypotheses are naturally diametrically opposed, and if an actual controversy does not already exist between the proponents of the two schools, it is probable that it will."

Not the least among the factors which have contributed to these conflicting notions, is the distribution among architects and builders of a small book entitled "Acoustics in Building Design," published by an acoustical engineering company. This little booklet introduces elements of mystery, vagueness and inaccuracy which most certainly obscure, and add confusion to the simplicity of the acoustic problem in architectural interiors. The two following quotations taken from this book will serve to illustrate:

1. " . . . But when these sound waves are confined to the interior of rooms and buildings, they are slowed up, accelerated, amplified." . . .

2. " . . . Past partially developed theories of architectural acoustics have been responsible for some very unscientific ideas. For instance, that the acoustics of a room can be a success or failure in direct proportion to the size of an audience. . . . We do not base our treatment upon absorption, but upon the proper direction and control of the sound. As a result, our auditorium is just as efficient with a ten per cent audience as with a hundred per cent."

It is unfortunate that such statements, without the support of adequate experimental evidence, should be circulated. The first statement contradicts the deductions and observations of all those who have contributed to the knowledge of the nature of sound propagation. Sound waves in air travel with a speed determined by the temperature and humidity of the air. This is not only universally recognized but is almost universally known among those who possess even the most elementary knowledge of physical science.

*The second paper, "Effects of Reverberation," will appear in an early issue.

The second statement is more than inaccurate; it is an affront to the monumental contributions of Professor W. C. Sabine of Harvard, whose life's work is not only the real foundation but also largely the superstructure of the science of architectural acoustics. Architects and builders all over the United States know of hundreds of instances in which the application of the "absorption" theory of W. C. Sabine has led to complete acoustic success, both in the correction of existing auditoriums and in the design of new ones.

The above conflicting statements, however, have raised questions in the minds of architects and builders, and the outcome is sure to result in good. For example, there is wholesome activity in the acoustic design of buildings in Southern California. The writer is familiar with more than a hundred auditoriums in and near Los Angeles in which the proper application of Sabine's theory has resulted in entirely satisfactory acoustic properties.

In order to ascertain in a precise manner the relative and absolute importance of the various factors which affect the reception of speech in auditoriums, the writer, during the past three years, has conducted some experiments. The results of these experiments should help to answer some of the questions which arise regarding the value of quiet and suitable reverberation in the acoustic design of an auditorium. The experiments, completed to date, were performed to determine quantitatively the effects of noise and reverberation upon the reception of speech in auditoriums. They confirm at least this much: If both noise and reverberation are suitably reduced, satisfactory reception of speech is made possible; but if either noise or reverberation exceed a definite limit, the satisfactory reception of speech is impossible.

The experiments are based upon the method of speech articulation tests, used by telephone engineers for testing the speech-transmission efficiency of telephone equipment. Meaningless monosyllabic speech sounds are called out, in groups of three, at the rate of one speech sound each .65 second, and observers stationed in different parts of the room record what they hear, or think they hear. By a comparison of their recorded lists with the called ones, the number and nature of the speech-reception errors can be determined. The percentage of speech sounds heard correctly is used to express the percentage syllable articulation under the conditions of the test. Likewise, the percentages of vowel and consonant sounds heard correctly express the percentage vowel articulation and the percentage consonant articulation, respectively.

The percentage syllable, vowel and consonant articulations therefore can be utilized to measure the acoustic efficiency of an auditorium for the reception of speech. The data the writer has obtained in seven different auditoriums seem to indicate the following general relations between percentage syllable articulation and hearing conditions as judged by an average auditor:

1. If the syllable articulation in an auditorium is 65 per cent, the hearing condition is just barely acceptable;
2. If the syllable articulation is 75 per cent, the hearing condition is satisfactory provided one listens attentively;
3. If the syllable articulation is 85 per cent or more, the hearing condition is entirely satisfactory.

A number of experimenters[1-4] have conducted investigations in

1. W. C. Sabine, "Collected Papers on Acoustics," Cambridge University Press.
2. F. R. Watson, "Acoustics of Buildings," John Wiley & Sons.
3. S. Lefschitz, Physical Review, 25, 391, March, 1925.
4. Marage, Comptes Rendus, 142, 878, 1906.

various rooms for the purpose of ascertaining the optimum reverberation a room should possess to give the best acoustic quality for speech or music. The investigations, in their method, depend upon the opinions of selected competent musical or phonetic critics. These critics listen to speech or music in rooms having different times of reverberation, or in the same room in which the time of reverberation can be varied, and then judge what condition provides the best acoustic quality. This method probably is the most satisfactory and direct one for determining the optimum reverberation for rooms intended for music, but the method of speech articulation tests should be more satisfactory and exact for determining not only the optimum reverberation in rooms intended for the spoken voice, but also for determining quantitatively the relation between reverberation or noise and the efficiency of speech-reception in an auditorium.

The writer's work on the interfering effect of tones and noise upon speech-reception has been reported elsewhere.[5] Only a brief account of that work will be included in this paper.

The noise tests were conducted in a room having a volume of 15,000 cubic feet and a time of reverberation of 1.3 seconds. The interfering tone or noise was conducted to the observer's ears by means of a pair of telephone receivers which were adjusted on the headband so that each receiver was at a fixed distance of slightly less than one inch from the ear to which it was attached. The speaker, or "caller," spoke with an easy, natural, conversational voice, at a distance of six feet from the listener. The energy of the speech-sounds reaching the listener was slightly less than one hundred thousand times the minimal audible speech energy, or the loudness of the speech was approximately 47 "Sensation Units."[6] This loudness of speech is comparable with the loudness of the average conversational voice in an auditorium.

Articulation tests were conducted in the presence of interfering tones of C_2(128 d.v.), C_3(256 d.v.), C_4(512 d.v.), C_5(1024 d.v.), C_6(2048 d.v), and C_7(4096 d.v.). The object of these tests was to determine which tones are most harmful to perfect speech reception and how loud the various tones must be to constitute a perceptible interference. Tests were also conducted in the presence of typical noises of various gradations of loudness. The object of the noise tests was to determine how much the speech in a room is impaired by the presence of an interfering noise. The interfering tones and noises were maintained at the following levels of loudness: 20, 40, 60 and either 70 or 80 S. U.[7] This covers a range of loudness from sounds of rather feeble intensity up to sounds considerably above the intensity of ordinary speech, music or noise in an auditorium.

The results of these tests are shown in a series of curves. Figs. 1 to 3. In Fig. 1 are shown the percentage syllable, vowel and consonant articulations in the presence of the different interfering tones used in this investigation. The loudness of the interfering tones is expressed in S. U. For purposes of comparison, the loudness of the speech used in

5. Physical Review, 26, 133, July, 1925.

6. This unit of loudness, proposed by telephone engineers, is very convenient, and its use in acoustic measurements is increasing. The loudness of a tone, expressed in this unit, is ten times the logarithm to the base ten of the ratio of the energy of the tone to the energy of a barely audible tone of the same pitch. For example, the standard tone in architectural acoustics, that is a tone whose energy is one million times the energy of a barely audible tone of the same pitch, is sixty "Sensation Units."

7. Abbreviation for Sensation Units.

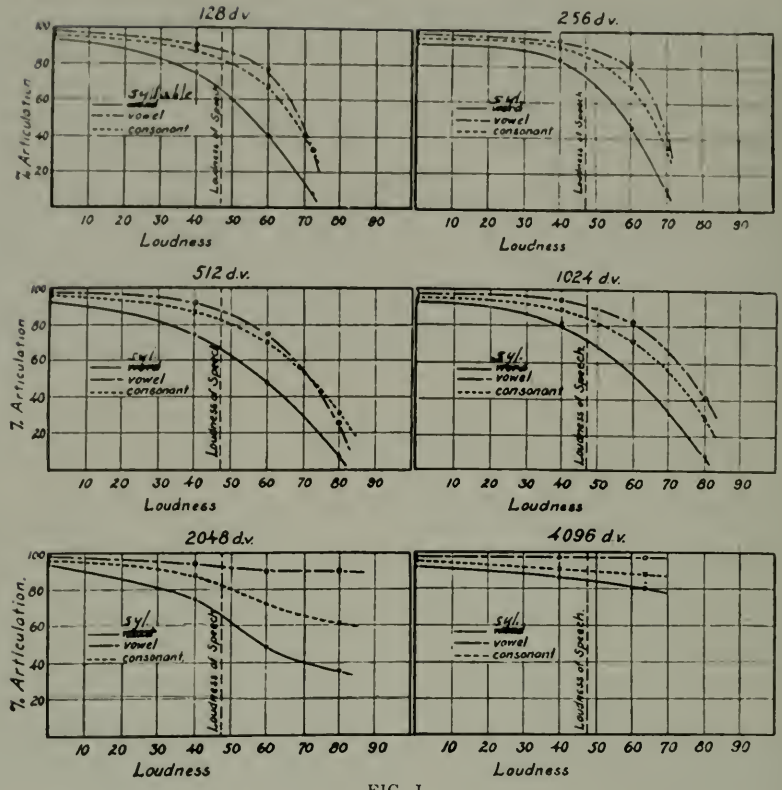

128 d.v.
256 d.v.
512 d.v.
1024 d.v.
2048 d.v.
4096 d.v.
% Articulation
Loudness
Loudness of Speech
Syllable
vowel
consonant
10 20 30 40 50 60 70 80 90

FIG. I

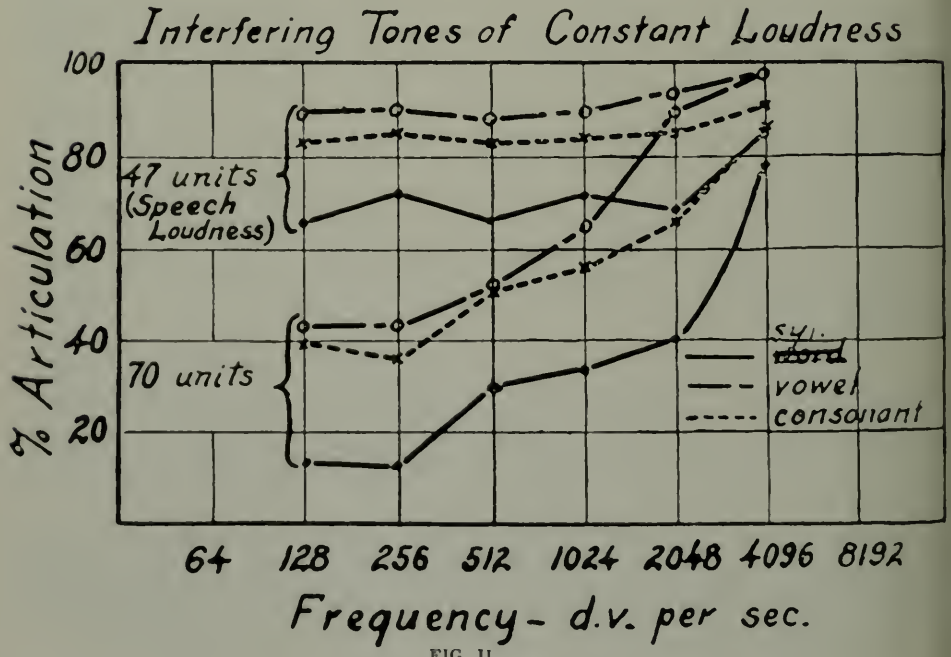

Interfering Tones of Constant Loudness
% Articulation
100
80
60
40
20
47 units (Speech Loudness)
70 units
syl.
word
vowel
consonant
64 128 256 512 1024 2048 4096 8192
Frequency - d.v. per sec.

FIG. II

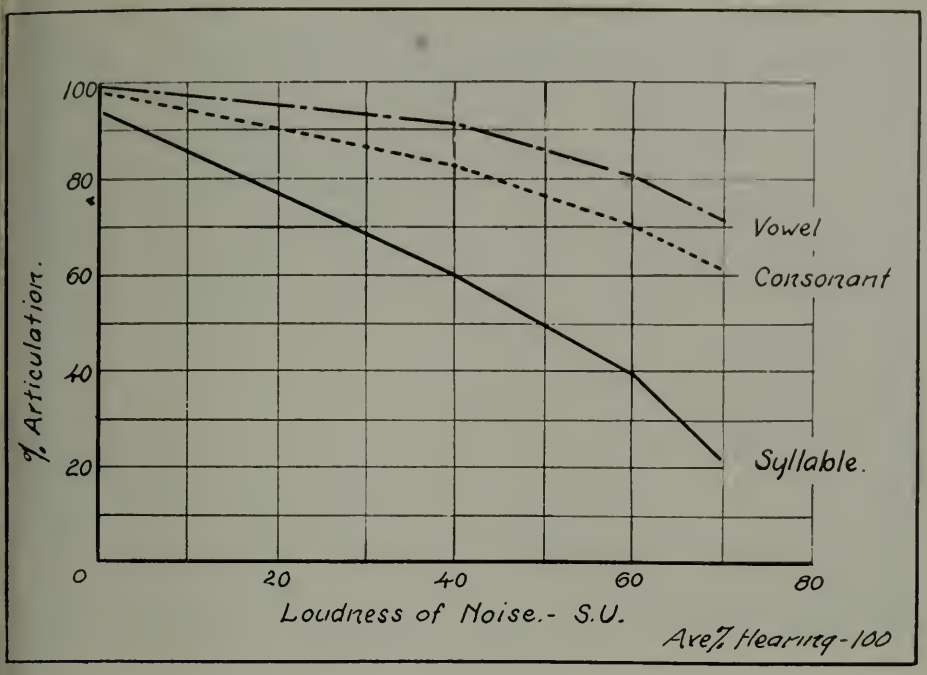


FIG. III

these tests, approximately 47 S. U., is indicated by a broken vertical line. Fig. 2 indicates how the percentage articulations for words, vowels and consonants varied with the pitch of the interfering tone, at two different loudness levels, namely, 47 S. U., the loudness of the speech, and 70 S. U. In Fig. 3 are shown the percentage word, vowel and consonant articulations in the presence of noises of different levels of loudness.

The data presented in these curves lead to certain conclusions which concern the problem of good hearing in interiors. These are:

1. The interfering effect increases with increasing loudness of either tones or noise. For tones with a loudness less than the loudness of the speech, the effect is almost independent of the pitch, but as the interfering tone becomes louder, the tones of lower pitch produce a relatively greater and greater interference. For example, at a loudness of 70 S. U., the syllable, vowel and consonant articulations for C_2(256 d.v.) are 13 per cent, 43 per cent and 36 per cent, and for C_7(4096 d.v.) they are 78 per cent, 98 per cent and 85 per cent, respectively.

2. The interfering effect of tones and noises, generally, is felt more in relation to the consonants than to the vowels.

3. A noise produces a greater interfering effect than an equally loud tone of any pitch. Thus a typical noise, of loudness equal to the loudness of the speech, reduces the syllable articulation to about fifty per cent, whereas any tone below C_6(2048 d.v.) of the same loudness, reduces the syllable articulation to about seventy per cent.

4. From an inspection of Fig. 3 it will be seen that even a little noise impairs speech reception appreciably. Roughly, it may be con-

cluded that the speech must be at least 30 or 40 S. U. louder than the noise, if the noise is not to produce a harmful interference. Expressed in energy, the energy of the speech should be at least 1000 to 10,000 times the energy of the interfering noises, if these noises are to be inconsiderable. This emphasizes the necessity for the complete reduction of noises in auditoriums.

5. Finally, these data indicate that the ideal sound absorbent material for the reduction of noises in architectural interiors should absorb, equally, tones of all pitch below C (4096 d.v.). This, of course, is also desirable for the distortionless production and reception of either speech or music.

* * * *

"Jazz" Plastered Walls

CONSIDERABLE attention is being given California plastered walls by Eastern builders who seem to have suddenly accumulated a vast amount of enthusiasm for this type of exterior finish. Trade publications, too, are devoting a lot of valuable space to "California jazz plastered houses" and, frankly, these comments do not leave a pleasant taste.

The Improvement Bulletin of Minneapolis, for example, writes that "hundreds of thousands of tourists to the Pacific Southwest have seen the attractive colored and textured walls and ceilings that are a feature of the California type of architecture and interior decoration. The desire for similar walls is becoming a vogue, not only in Florida but in many northern and eastern states as well."

In reply to this rather exaggerated statement the Southwest Builder and Contractor of Los Angeles sensibly says:

> We hope for the peace of mind of those who feel compelled to live in the east that the extremes of the "jazz" plastered walls in California will not be copied there. The so-called texture plastering came in with the Italian and Spanish style houses which have reached an advanced stage of artistic development in California. Properly done, this textured plastering is most pleasing and most effective. The play of lights and shadows, which is its chief charm, may be heightened by the use of color. In capable hands the addition of color enhances the artistic effects that are possible. Unfortunately, however, the color treatment has frequently fallen into the hands of novices, and the bizarre effects often produced, and most properly referred to as "jazz," are a travesty upon and are not an indication of real Spanish or Italian architecture, as many uninformed persons have been led to believe.
>
> Spanish and Italian houses have attained wide popularity in California because they fit into the environment and reflect the historical traditions and spirit of the country. They are always good in California and in succeeding years will always be conspicuous in residential construction. But they are dividing honors just now with the English cottage style house with plastered exterior walls and steep pitched roofs. For the public is susceptible to fads in architecture as well as in clothes and other things. During and for a brief time following the world war the Colonial style house was a fad in California. It superseded the craftsman and so-called Japanese and Swiss styles which the fickle public said were out of date. Colonial in turn gave way to the Spanish and Italian house, and now the English style house is bidding for public favor. This faddist tendency of the public mixes things up in an appalling way. People try to make over craftsman houses into Colonial, Colonial houses into Spanish and Italian, and so on, by the addition here and there of some characteristic ornament, by changing interior decorations and furnishings, or some little touch, totally oblivious of the incongruity of their combinations. No meritorious architectural work is ever out of date, although it may be out of place. A Colonial, Spanish, Italian, English or other style of houses well designed is always good, just as are the master compositions of Beethoven, Mozart, Handel and other musicians whom some ignorant or thoughtless persons may refer to as "old fogies."

PUBLIC LIBRARY

FOUNTAIN, RESIDENCE OF W. O. HORABIN, PALO ALTO
Birge M. Clark, Architect

Some Modern Uses of Glazed Tiles*

By A. L. SOLON

THE use of burned clay tile for floor and wall coverings has increased so remarkably of recent years that it is interesting to note the many modern applications of this interesting building material.

Centuries ago glazed tile was an almost indispensable building material in all Mohammedan countries. Walls of wood, sun-dried earth and rubble were converted into surfaces of exquisite beauty by the application of colored tiles which have retained their original perfection even to this day. The people of these countries delighted in the use of brilliant color; they used it not only for the interiors of their buildings but for the exteriors, also frequently encrusting the entire facades of their mosques and universities with tiles of rich color and intricate design.

These people after spreading their culture along the southern shores of the Mediterranean, carried it by conquest into Spain where they developed their knowledge of ceramics to the highest perfection. The year that Columbus discovered America was also the year the Moors were driven from their last stronghold in Spain, the city of Granada, which today contains so many glorious monuments to the skill of these master craftsmen. It is the opinion of many who have visited Spain, that despite the fact that the Spaniard has about him the finest examples in the way of decorative tile to be found in Europe, he succeeds in making today perhaps the ugliest and most unattractive tile to be found anywhere.

In the United States, up to within the past few years, the use of tile has been confined to places where its obvious sanitary and wear-resisting qualities were recognized. The white tile was used for bath-

*The tile shown in the accompanying pictures is from the studio of Solon & Schemmel, San Jose.

room walls, the small vitreous tile for floors where heavy traffic was encountered, and the red quarry for corridors and garden walks. Its use for decorative purposes was confined to mantels and occasionally to the exterior of buildings when green glazed tiles would be sparingly stuck on like postage stamps.

The architect of today has succeeded in impressing upon his clients the desirability of the use of color for bathrooms, kitchens and other places formerly not considered worthy of beautifying. This has resulted in the tile manufacturer extending his range of colors to include almost everything from Atmosphere to Coal Scuttle Black! The great popularity of the colored tile bathroom has kept manufacturers so busy that there has been scarcely time to check up and note how we are progress-

STAIRCASE IN DON LEE BUILDING, SAN FRANCISCO
Weeks and Day, Architects

ing. In the period only recently passed the average citizen who built himself a house, if he were at all respectable, immediately saw the necessity of having his living room done in brown. The walls of his dining room were red and the carpet was green. Why? Because that was the proper thing. Besides the wall paper dealer recommended and the furniture man strongly urged it.

What will the orchid bathroom of today look like to us twenty years hence? Oscar Wilde and his aesthetic sunflower are but a memory; the moth has destroyed many green carpets, but today's orchid tinted tiles are as strong as Faith and more enduring than concrete foundations. With so many fine colors to choose from should we not pause and consider posterity ere we befog this fair land in a purple

haze of orchid bathrooms? There is no reason why the bathroom should not be a delightful place, it is no longer necessary to receive a sanitary chill on entering, as the cold white tile is happily becoming a thing of the past. Good effects are obtained from the use of medium sized square tile with joints about a quarter of an inch in width, the color of the cap and base contrasting with that of the field. The floor may be in another color and of dull glazed tile, this surface being quite capable of withstanding all the wear it will ever receive. The color of the grout used in jointing should be carefully selected, the safest way being to have a small section of the work pointed before giving instructions to complete the job. A little color in the hands of the average tile setter is apt to be a dangerous thing; he should be shown a sample of what is

AUDITORIUM, DUDLEY STONE SCHOOL, SAN FRANCISCO
John Reid, Jr., Architect

required and not be allowed to put in what he may consider will make a "snappy job".

The use of tile for wainscots in public buildings subjected to hard usage is frequently seen in the better class buildings. Beside the sanitary quality of the material it has the additional advantage than when once installed it has never to be replaced or repaired. A decorative effect is readily obtained by the introduction of bands of running ornament or pattern tile inserted into the field at intervals. Treatment of the walls in this manner greatly enhances the beauty of the building, —the colors never fade nor can stains affect them. As an investment it is worth considering. A simple form of wainscot five feet high may be composed of a cap with slight projection three inches wide, field of

RESIDENCE OF G. A. LANSBURGH, SAN FRANCISCO
G. ALBERT LANSBURGH, ARCHITECT

six-inch units in another color and base nine inches high the same color as the cap.

In California and the Southwest the adoption of the Mediterranean style of architecture makes the use of decorative tile for exteriors desirable in many cases. As walls are frequently plain surfaces unbroken save for apertures, the enrichment of architraves with bands of colored faience may prove very effective. The same medium used in soffits and under cornices imparts a colorful glow to shadows which is needed in certain types of buildings. The most effective use of this type of tile is around doorways where interest is centralized. Generally speaking, a polychrome tile having a continuous pattern is more effective than unit designs only loosely related. The width of the band should be carefully decided upon; twelve to sixteen inches of decorative tile in fairly

AQUARIUM, GOLDEN GATE PARK, SAN FRANCISCO
Lewis P. Hobart, Architect

strong colors will carry from quite a distance. In some cases where a narrow band three or four inches in width has been used the effect at a distance is that of a weedy vine that has managed, after much care and training, to struggle around the doorway. The use of glazed tile for risers in houses of this type may be employed either for inside or outside stairs. Different patterns in the same stairway may be used to give additional interest but consistency in color relationship should be regarded. Care should also be taken that the end riser on an open stairway does not finish in such a manner as to leave an unfinished edge. Because tile risers are used it does not follow that the treads must necessarily be of tile; cement or wooden slabs may be used to advantage.

For many centuries the people of Southern Europe have taken apparent delight in the design and construction of their garden fountains.

ENTRANCE TO RESIDENCE OF
MR. BOLINGER, LOS ANGELES

BAKESTO FOUNTAIN, SAN JOSE, CALIFORNIA
BINDER AND CURTIS, ARCHITECTS

STAIRCASE IN R. S. MOORE RESIDENCE, MENLO PARK
ALBERT FARR AND JOHN F. WARD, ARCHITECTS

TILE PANELS ON EXTERIOR OF KINDERGARTEN
DUDLEY STONE SCHOOL, SAN FRANCISCO

Almost every court has its fountain and we have adopted this pleasant feature for our own courts and gardens with a good deal of success. This usually consists of a basin from the center of which rises a pedestal supporting the pipe through which the water is conducted. The basin forms an interesting problem and may be treated in a number of ways. As a rule this is made either round or octagonal in shape and is of concrete veneered with colored tiles. Occasionally the floor of the basin is elaborately worked out both as regards the design and the color but this is apt to be a waste of effort as dust and the growth of algae will soon hide whatever may be placed there. Care should be taken to select the right thing for what goes above the water line, but pieces of broken tile may be as satisfactory as anything else for the bottom of the basin. The pedestal and feature through which the water flows present the hardest problem. We have drooling water babies, fish that stand uncomfortably on their tails and spout, spitting frogs, Greek slaves that pour water ceaselessly from an amphora and many other disquieting devices. As all these methods of playing the fountain are more or less disturbing perhaps the simplest and least ingenious process is the best.

Of recent years a great deal of interest has been shown in the use of tile pavements for both public buildings and private residences. Formerly one's choice lay between a square or an oblong block of red clay but now tiles may be obtained in a large variation of shapes and wide range of color. Many of these floor designs are rich in pattern with colorful borders; formerly the difficulty in getting good mechanics to lay these floors left the final results in doubt but this condition is happily changed and the owner is now nearly certain to get a good job. In only one respect is it necessary to exercise vigilance in supervision and that is with regard to the cleaning. If a colored grout is used there is a chance that the stain will be smeared over the face of the tile and become unsightly unless carefully cleaned. It would seem from experience that the average mechanic begins to lose interest when the clean-up period of the work is arrived at and unless supervised may leave a thin scum of cement on the face of the tile which will be difficult to remove later. After as much of the surplus cement is removed as possible the floor should be well rinsed with several washings of clear water, and any cement still adhering should be removed with a dilute solution of muriatic acid and water.

A tile floor is not in its best condition until after it has been in use for some time. It should be borne in mind that all tile is usually soaked in water before it is set and this water is slow to evaporate. As this water evaporates it may leave an efflorescence in the cement joint or on the face of the tile. If this appears in the form of a heavy white scum it must be removed with the acid solution. If the scumming is mainly in the joints and just at the edges of the tile it may be permanently removed by the application of any light oil.

Medium burned quarries as used for residences may be greatly improved by the application of floor wax. This fills the pores in the clay, prevents efflorescence and besides giving a very pleasing color effect makes the floor very easy to take care of. Mantels of similar unglazed material may also be benefited by rubbing occasionally with any light oil.

The manufacture of glazed tile is a time-consuming process. Clay

goods have to be dried very slowly and usually require two burnings. If the tiles are to be decorated, it must be done by hand, and this work is slow and tedious. There is also a great risk of the tiles not coming out satisfactory from the kiln, in which case the work has to be done all over again. It is desirable, therefore, that this material, particularly if special designs are required, should be ordered as early as possible in order to give the manufacturer every opportunity to make it in ample time and prevent delay.

* * * *

Arc-Welded Structural Steel

By G. D. FISH, C. E.

USHERING in a new era of structural steel erection, which promises to save millions of tons of steel yearly and heralds the death of the nerve-wrecking rivetting hammer, Vice-President W. S. Rugg, of the Westinghouse Electric & Manufacturing Company, recently announced the letting of contracts for the erection of two arc-welded structural steel buildings on his company's properties.

The contracts were made known before representatives of various structural steel concerns, technical societies and technical publications, gathered in Pittsburgh to witness tests in the laboratories of the Carnegie Institute of Technology of arc-welded steel joints and columns.

The two proposed structures announced by Mr. Rugg include a one-story building to be used as an engineering laboratory in the East Pittsburgh Works and a five-story mill type building to be used in the manufacture of transformers in the Westinghouse Sharon Works.

Both structures will make steel history. The five-story building at Sharon, when completed will be the largest arc-welded or rivetless building in the world and is the first practical application of arc-welding to the building of multiple-storied structures. It will be the first building in the world with all joints and members designed for arc-welding. It is a radical departure from previous practice in that practically none of the members could be joined except by arc-welding. Its cost will be about $275,000. The one-story East Pittsburgh structure is epochal in that it is being erected partly of scrap roof trusses, a feat economically unfeasible heretofore.

Arc-welding as applied to the erection of structural steel has been in process of development by Westinghouse engineers, co-operating with the American Bridge Company, for some time during which tests conducted in the Carnegie Institute laboratories of material prepared by Westinghouse arc-welding engineers has developed the fact that arc-welded joints were stronger than rivetted joints, and were in fact, stronger and more resistive to pressure and stresses than the adjacent beams. It was also found that the saving in steel effected in arc-welded structures was considerable, not only because of the elimination of the thousands of plates and angles now necessary in rivetted building but also because lighter beams could be used, thus making the entire structure weigh less. In rivetting construction, the size of the beams is frequently determined by the strength required of the rivetted joint rather than of the members joined. In the Sharon building where approximately 700 tons of steel will be used, there is 100 tons less steel than would be necessary if the structure were to be rivetted. This alone

means a saving of about 12 per cent in steel cost. A considerable benefit to be derived from arc-welded structures also lies in the elimination of the noisy rivetting hammer, whose nerve-wracking noises now herald the erection of all steel structures.

G. D. Fish, consulting engineer of New York, assisted in the preliminary tests. Bernard H. Prack is the architect of the Sharon building.

The series of tests of arc-welded structural steel has demonstrated the following facts:

1. That welded joints can be constructed in such manner as to develop fully the ultimate strength of the structural members connected.

2. Beams and girders can be connected to columns so as to produce absolute fixation.

3. Lines of beams or girders can be connected so as to provide complete continuity across the supports, whether the supports be girders or columns.

4. That a steel I-beam of given section and length will sustain a far greater load if fixed at its ends by a suitably designed welded joint than if supported by standard rivetted connections consisting of top and bottom angles. A 9-inch standard I-beam framed between rigid upright columns 8 feet apart by means of specially designed welded connections sustained a load 25 per cent greater than a beam of the same size and length framed between columns by means of rivetted top and bottom angles of half-inch thickness.

5. A plate girder assembled by welding and consisting of nothing but sheared plates, has a far greater bending strength than a rivetted plate-and-angle girder of the same weight, due to the better distribution of the steel in the cross section. A 15-inch plate girder assembled by welding and simply supported on a 14-ft. span developed more than 50 per cent greater strength than a rivetted plate-and-angle girder of the same depth and the same weight.

6. A double angle tension member such as is used in trusses was connected at the ends by welding, and when tested to tension failure broke through the angles at a load 30 per cent greater than the load at which a hanger consisting of the same size angles with rivetted end connections failed.

The prevailing impression among the witnesses was that these tests demonstrated the superiority of welded connections to rivetted connections in every case where direct comparisons were made, and brought out two general facts:

1. That complete continuity of lines of beams can be obtained in welded construction, whereas it is well known that this cannot be done in rivetted construction.

2. That in a welded building it will be possible to make every joint develop full strength of the main members, whereas in a rivetted building many joints are weaker than the members due to the weakening effects of the rivet holes and the weakness of steel angles which have to be used for transmitting tension between two members at right angles to each other.

It was proved that a welded plate girder was 50 per cent stronger than the rivetted girder of relative depth, length and weight.

An Olsen testing machine, capable of applying 400,000 pounds, was used.

The tests proved the entire practicability of welding without any misgivings as to safety.

Problems of Architecture as a Profession

By A. PESSAMIST*

THE late Frank Norris opened his "Advice to Young Novelists," with the urge "Do not write a novel"—and as a result of some fifteen years experience, I feel bound to plagiarize with the remark "Do not practice architecture." If, however, you insist upon ignoring this well-intended advice, at least read what I have taken the trouble to pen:

For obvious reasons names and places must be omitted and you are asked to take for granted that the facts are true. If you are from Missouri on this point however, ask any architect of standing and I will wager he will back me up or possibly go one better.

First, what is an architect? The State of California says, "one who is competent and licensed by law to plan and supervise the construction of buildings." Ruskin says, "he must be a sculptor, painter and artist or he is simply a builder." I think we can accept Ruskin with the painter and sculptor omitted; at any rate that is the only type I have reference to in using the term architect.

Next, how to obtain the training necessary to become an architect? This is easily answered. If you have not the money to attend a college, get a job in an office and join the Beaux Arts Society of America. The instruction is practically free and of par excellence in quality. In the city in which I reside the two instructors, (patrons they are called) are magnificently trained designers, associated with a leading firm in the town. In fact it is so easy to obtain education today that the subject appears to me to be unnecessary to dwell upon.

Having obtained the training the question which necessarily follows is, how to become established, or in our parlance "get jobs." Now we come down to business.

The leading citizen, on commencement day at the local high school, loves to announce to the graduating class about to embark on the journey through life that "there is always room at the top." A few decades ago he used to say that "every boy may be President of the United States," though I hardly believe you could find any leading citizen hardy enough to risk it today. Of course it is true that in every profession there is always room at the top and it is likewise true that every boy has a chance of becoming President of the United States—a chance of about one in 40,000,000. Before saying there is room at the top, find out how much room there is there and what obstacles you have to overcome to get there.

Just as we agreed on the definition of an architect, so let us agree on what "getting to the top" means. Let us eliminate structures of a half million and over and agree that the man who is continually busy with a business that nets him a yearly average of say $5000 to $6000 has reached a point where he may call himself successful. This would imply say ten or twelve structures each year at from $10,000 to $20,000 each.

We can now discuss the nature of the work and the various methods of obtaining it. The first system I propose to call the "stand and deliver system." It is worked in the following manner: The architect forms some sort of monetary association with one or more real estate

*For obvious reasons the author's name is withheld. He is associated with one of the leading architects in the San Francisco Bay region. He believes the publication of his views will be of constructive value to the profession and while the publishers do not agree with all of his sentiments, the contribution is published in full with the thought that it may accomplish some good—Editor.

brokers where business consists in securing tenants for garages, factories, and various sorts of commercial enterprises. A certain vacant lot is selected and a tenant is found who will give a long term lease for let us say, a garage. The owner of the property is then approached and the proposition laid before him to build. If he has not the ready money but is willing to entertain the proposition, arrangements are made to secure capital either by raising a loan or finding someone who will buy the lot and build. Now here is where the "stand and deliver" proposition comes in. He is not allowed to choose his own architect but must give the job to the architect associated with the broker. If he refuses, the deal is off, another piece of property is secured and the whole transaction repeated. I have seen this done two and three times and as each attempt necessitates numerous conferences between architect and broker and a sketch for each lot, it can be seen that an enormous amount of time is consumed. Then to complicate the situation, the tenant is being approached by other architects and brokers, who also interview owners of all available property in the neighborhood. The result is a general wild scramble resembling a political melodrama more than a proposition to build a building. Sometimes the realtor, should the owner of the property agree to build but balk at having an architect thrust on him, tips off the proposition to another realtor and they go through the deal secretly with another architect, leaving the original one to twirl his thumbs. Yes, the "stand and deliver" system is exciting, full of double-crossing and questionable business practice.

Now suppose the deal goes through. The architect has not been sought by, but has been thrust upon the owner, which is anything but a fortunate situation to start with. The owner is anxious to build as cheaply as possible and the tenant is striving to get all he can. Both parties sign plans and specifications which, as laymen, neither fully understands, with the result that the progress of the job is one continuous battle that usually ends with bad feelings of both parties toward the architect. I was in a position to see a great deal of this type of business at one time and I never saw a single case in which an owner ever recommended the architect for future work, nor did any one of these jobs lead to another. The result of the "stand and deliver" system is that instead of building up a reputation the architect might be compared to the traveling theatrical company that used to play one-night stands in small towns. No matter how bad the show the next town did not know it. So the architect must fight for each job.

In fact, is an architect needed at all in this class of work? I should say he is not. The average commercial building consists of a stereotype plan with dabs of stock ornament thrown on the front, which any cheap draftsman with the aid of a structural engineer, can draw up in a short time. Neither the owner, tenant, nor broker knows, or cares a rap for architecture. It is simply a case of so many square feet for so much money. A few years ago architects were able to really make a little money in this "knock down and drag out" manner, but fortunately, builders and engineers realizing that no architect was needed, have gone after and succeeded in grabbing most of this business. Of course once in a while some manufacturer desires to make a feature of his building for advertising purposes and seeks the services of a real architect. An example is the Shredded Wheat building in Oakland, California, which although a factory, is one of the architectural masterpieces of the city.

Now, as this class of work includes cheap stores, garages, manufacturing plants, wholesale houses, etc., it can be seen that a good many

feet of standing room have been knocked off the so-called "top" of the architectural profession.

In every city, large and small, we see about us hundreds of apartment houses, flats and hotels, and to judge from the appearance, none of them, with the exception of a few $1,000,000 structures, show the hand of any architect who has reached the "top." Here must surely be a fertile field for talent. Here is a situation worthy of investigation. Millions of dollars worth of work and apparently done by no person of ability. And to think of the possibilities: Every apartment house has a large entrance hall which may be treated in renaissance with beamed ceiling, finely detailed Italian mantel, and to cap the climax a superb stairway leading to the floors above. Think of Florentian grille doors for the elevator and beautifully textured walls! Oh, a regular architect's dream is possible.

Let's go after this work. But first, let us see what is now being paid for apartment plans in many instances. I know of one man who has done probably two or three hundred of these buildings. His fees, so I have been told, run from $25.00 to $100.00. No, I have not been to the bootlegger or a hop joint and no printer's error has been committed. This is actually a fact, though I will admit I believe it to be an extreme case. But how is it possible for any one to deliver plans for buildings costing from $25,000 to $50,000 for even ten times the fees mentioned? Easy, for I have seen some of these plans.

In the first place most of the plans are stereotype, as the lots run in multiples of about five feet in width. The plans are simply outlines with practically no notes, such as may be traced in a couple of hours time. The elevation is simply a rectangular outline with some holes for windows and a few scribbles here and there for "stock" ornament. They don't even bother to use the word stock on the drawings; this is taken for granted, just as it is taken for granted that nails are to be used to hold the lumber together. A very vague stereotype specification completes the service. Any supervision of the job would be a joke.

Now here is where the reader is going to get me. "This is pure moonshine" he will say, "no such plans without any structural elements will get by the 'Board of Works'." No, you haven't got me yet. A structural engineer is employed by the owner to complete the plans and believe me he is well paid. Why? Because the engineer is necessary and the architect is not. Because it takes several weeks of expert work to prepare structural plans for such a building, while any draughtsman can make the architectural drawings in a short time. Architects may not like to read this but that does not alter the cold hard facts.

Now of course there is a rift in the clouds. In some residential districts there is apparently a demand for a really nicely designed structure, requiring a fairly high degree of talent, but such buildings are few and far between.

I have talked to architects on this subject and they have risen in wrath, but I cannot see that they have any real grievance. If a man wishes to build a structure virtually without an architect, I cannot see why he has not the moral right to do so, provided the structure is not a menace to life or health. Now there are ways in which this situation may be overcome and it is to point out the remedies that has lead me to write this article. If it were possible to convince an owner or speculator, for these buildings are usually built to sell, that by paying a fee sufficient to allow for time and study with a reasonable profit, a building could be produced which would attract tenants more easily than others in the neighborhood, a start might be made in good design. This is the only

talking point you have, for even assuming the owner to have some architectural taste, he does not expect to live in the building nor even to own it long.

The time may possibly come when the aesthetic will be considered on a par with health requirements and all plans will have to be passed upon by a committee of trained men. In fact it is occasionally done in a lame duck fashion in a few residence tracts, but as to the thing ever becoming a state or municipal law the probabilities are very vague and far off. At any rate it would not hurt if the legitimate architects would get together, form an association, and try something of this kind. It might be the beginning a very beneficial piece of legislation.

No talk on the architectural profession is complete without a word on the subject of the promotion real estate broker. Of all the time wasters I know of no equal. He is worse than a crew of draftsmen reading novels when the boss is out. A broker sees a lot that he thinks he can "work on." In his mind a hotel of certain character would have a ready sale. He forthwith goes to a gullible architect to have plans made with the understanding that if the deal goes through he, the architect, will get the job. Usually, he has not even a sales contract on the lot, and even if he has, he entices the architect into perhaps a week's work or more with only a vague chance of compensation. Now of course some of the jobs do go ahead, but the curious thing is that they never seem to lead to further work.

I know of one man, one of the most brilliant designers in the community, who started practicing in residence work some ten years ago. Although he started with no so-called "pull" whatever, in a short time he acquired a regular string of clients. Each residence, due to satisfied clients, would bring another. About four years ago, becoming discontented with what he considered a small business, he tried the promotion game. He made sketches by the dozen—by the hundred, and with what result? After about three years of this architectural stock market gambling he did three jobs which netted him about $2000 or $3000. Meanwhile, he let the residence work slip. He has now gone back to residence work and as usual, each one seems to bring another, but the promotion business cost him three or four years time in prestige.

Now anyone who is familiar with the inner working of an architect's office and who stops to think, will see why one class of work brings more jobs and why the other class does not. The residence is the home, where the owner expects to spend possibly the rest of his days. Usually the woman is the directing party and she has spent possibly two or three years visualizing her house. She looks over every architectural magazine published, visits houses in the neighborhood and every house she sees under course of construction. If she is a woman of means she has traveled and can frequently tell the architect things he doesn't know. When the house is completed and everything has gone smoothly, she systematically takes each friend from top to bottom, extolling the virtues and beauty of the place. Thus the architect obtains a perpetual source of free advertisement.

Now, as I have thrown the wet blanket on about every type of architecture, I must naturally be supposed to have some strong objection here. I have, and it is this: You must be, in addition to being a thoroughly practical builder, a Class A No. 1 designer; you must have all the styles from Italian Renaissance to Tudor at your finger's end. You must not for a moment underrate the knowledge of your client. You may get away with it for awhile, but every so often you will get some real body blows. A few examples will suffice:

A certain architect was preparing plans for a large English house in the Elizabethan period, when one morning the client came into the office in a high state of excitement and inquired why the architect had put an Italian entrance on an English house. It appeared that he had shown the plans to some friends and the point had been raised. The architect was compelled to take out his books and show that the English at this period were bringing Italian detail into England. Here we have a client with a meager knowledge of architectural styles and a desire to have his house correct.

On another occasion a lady was having a house designed in English type and insisted that the Tudor arch which the average draughtsman makes with a straight rim, be curved in the manner peculiar to the type. She further requested that certain detail from a celebrated manor house be copied literally and brought photographs for the purpose. This lady had traveled in England and knew what she wanted.

Now in both these cases had the architects been incompetent men, their ignorance would have been exposed, and do not suppose it would have been regarded as confidential information. Just as the client who is proud of his house will advertise you, so the one who finds you ignorant will advertise your ignorance.

I may give the impression that in my opinion the only type of work for the highly trained man is residential. Not so, but I do believe it is the easiest form of entry for the young architect without social or political influence. It is but a step from the $7,500 house to the $10,000 and from the $15,000 to the $20,000 home. He now is reaching people of influence and position, members of exclusive clubs. There is the possibility of a club house job. This may mean a $75,000 or $100,000 building. Thus it can readily be seen how banks, etc., may follow. A friend of mine has recently completed some highly artistic stores in a neighborhood where the authorities demanded something good before they would issue a permit for a store at all. These have been commented on favorably and may possibly lead to more.

And now I come to a subject which I think demands considerable space, and that is—how to handle clients; a common but harsh phrase which should be changed I think to—how to get the client's point of view. It is a subject not architectural but psychological in character. It is a point which I think should be studied with greater care by the architect than any other type of professional man.

A man goes to a civil engineer to have a reinforced concrete dam constructed. The engineer calculates the spacing of the rods and should the client ask why he does not space them some other way, the former will reply that if he does the dam will burst. As a client knows nothing about engineering, this answers the argument. So it is with the attorney or the physician. These men are seeking certain definite results —a safe dam—a suit won—a disease cured. They are presumed to know their businesses, while the client will admit he knows nothing whatever about these subjects.

But here comes a man who wants a pediment over an entrance. The architect sees that this will crowd a window, or possibly a second-story overhang. He says so. Will the client believe it? If it happens that it is physically impossible to place it there he will, but if the architect shows that it can be done but will spoil the "effect," in about 50 per cent of the cases he wont. And now our argument starts. The client leaves the office with the determination to have a pediment, the architect goes

back to his work with the determination not to have the pediment. Next day the client appears with photographs of buildings with pedimented entrances to prove his point. The architect looks at the pictures and discovers one of two things; either the conditions are entirely different or the examples are from atrociously designed structures. Usually it is the latter case and if unfortunately the structure happens to be a large building, the architect's position is considerably weaker. Thus the battle is renewed and we have all the elements leading up to the dramatic moment when someone is told to go to ——.

Now what should the architect do? Should he put the pediment on, on the ground that the client is entitled to what he wants, or should he throw up the job and send a bill for "services to date"? Here is what I think should be done. First, the architect should earnestly attempt to alter the design in such a manner as to appropriately place the pediment. In many cases this can be done successfully. If this cannot be done he should simply say, "You have offered me a fee to design the best structure of which I am capable and you must have assumed that I am more capable than you before coming to me. All trained men will criticise this thing severely and furthermore, if you really do not care for expert advice, you are simply wasting money. You could have these plans prepared for probably less than half the money by some cheap man, and it is simply unfair to you for me to do what you ask." This will probably settle the argument; usually it is not necessary to go this far, but if this does not accomplish results, then it is better I think to send your bill. You will lose a job, but you may lose more jobs if you don't. Remember, unfortunately your brother architects do not follow the practice common to physicians relative to criticism, and you may be splendidly roasted especially as it is impossible to explain to the entire populace that the work was done under compulsion.

Another trick which I have worked successfully: Have about you architectural magazines from which you have carefully cut out any poor work which may have been published, and which contain work done by the best men in your community. Let your client believe that you are following the leaders in the profession, and don't bunk him about it; actually follow these men and you are not likely to go wrong.

Another trick is what I call the "millionaire gag." You wish to use a certain treatment in a living room of a $15,000 residence. If you show a picture of a similar treatment in a $500,000 residence, you will, ten to one, win the highest approval from your client.

One more point: As the client should pick his architect, so the architect should pick his client. Just as the client needs a high-class architect, so the high-class architect needs a high-class client. I use the term in the cultured, not the monetary sense.

Of all the types of clients that I know of, the most exasperating is the "ecclesiastical client." To this type a beamed or vaulted ceiling or a Tudor arch, always "looks like a church." They apparently have a horror, worse than an atheist, of having a residence resembling a church. To them the pictures of all fine residences appear a chapels and monasteries. This type represents the dregs of the cup as clients go, with whom it is next to impossible to do business.

Now I have tried in the foregoing article to give facts as I have seen them, situations which I have personally experienced instead of

opinions. Now where am I wrong? Is it not just as absurd to try to sell a set of apartment plans worth $2500 to a man who is perfectly satisfied with a set which he can purchase for $25.00, as it is to try to sell a dress suit to a man who wants overalls and a jumper? A glance at a daily report on building permits will show that no architect is employed on the vast majority of small buildings and where they are, investigation will show a set of floor plans worth not more than is paid for them.

Can it be charged that I am casting slurs on the profession? I think that good architecture might be compared with Wagnerian music. Few will deny that it is superior to any music ever written; also few will deny that there is an extremely limited class of people who care for it. It is certainly no disgrace, rather a compliment to a true architect, to say that his work is of such a character that only a limited class appreciate it.

It may appear that I have laid particular stress on the necessity of artistic abllity in a sucessful architect, and said very little regarding the so-called practical ability necessary. This is simply because the latter is taken for granted. It is simply a matter of years of office experience and attention to detail. It is certainly if anything, more important. A leaky roof or a chimney that will not draw will do an architect more harm than a poor piece of design, but you will find these things done properly in an ordinary builder's bungalow.

Now as to the promotion architect, the "stand and deliver man." Does this business pay? Sometimes it does for the few, just as the stock market pays for a few, but I never heard a leading citizen on commencement day at the local high school, urge the boys who want to go to the "top," to play the stock market. And, is this type of architect really practicing architecture? I contend he is not. An investigation of his office will show why I make this contention. His time and mind is given over entirely to real estate deals and a designer is employed to get out the work. This man is really the architect.

* * * *

Who "Built" the Building?

We were sitting in our office the other day when an old employee, a building superintendent, whom we hadn't seen for years, came in for a chat. He showed us a portfolio of photographs of buildings he had worked on during the past few years. In telling us about them he continually used the words "I built this in 1917" or "I built this in Chicago" —always " I built."

In talking to contractors, especially those doing masonry or carpentry, we always hear "I built a factory for—" or "I built a three flat," etc.

The same is true of owners, who in a measure have more claim to the distinction. Still, isn't it true that an owner only pays for the building? He doesn't build it.

And the real estate operator, those who promote and finance—and the structural engineer—they claim the distinction.

Lastly, what about the architect, who conceived the idea, who put it on paper, who awarded the contracts, who selected the materials and who saw that they were correctly used? Did he "build" the building? If not, who did? And, if so, why do the others claim, and get, the glory?—Bulletin Illinois Society of Architects.

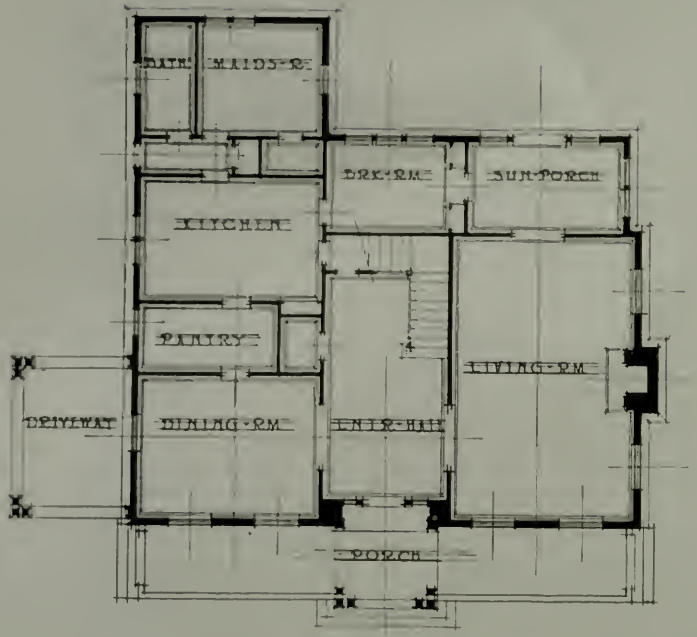
RAY OFFICE BUILDING, OAKLAND
WILLIS F. LOWE, ARCHITECT

ENTRANCE, RAY BUILDING, OAKLAND
WILLIS F. LOWE, ARCHITECT

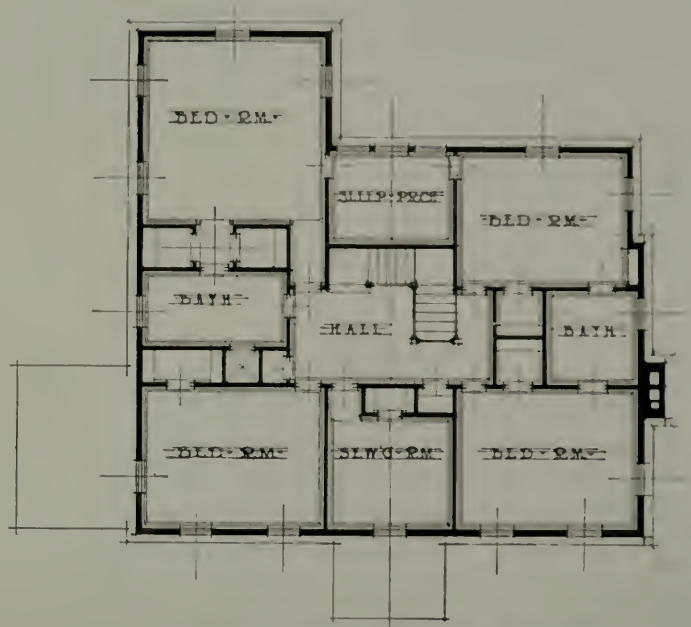
FACADE, EAST BAY COUNTRY CLUB
W. A. DOCTOR, ARCHITECT

LOUNGE, EAST BAY COUNTRY CLUB
W. A. Doctor, Architect

DINING ROOM, EAST BAY COUNTRY CLUB
W. A. Doctor, Architect



FIRST FLOOR PLAN



SECOND FLOOR PLAN

PLANS, HOUSE FOR ADDISON STRONG, BERKELEY
B. REEDE HARDMAN, ARCHITECT

HOUSE FOR ADDISON STRONG, BERKELEY
B. REEDE HARDMAN, ARCHITECT

An Institutional Church

By H. MONROE BANFIELD, Architect

AN Institutional Church is that type of edifice existing in almost every denomination which is primarily devoted to some kind of social usefulness; a church which, conscious of its obligations to society no less than to the individual, does not confine its mission to public worship, but actively fosters every good tendency in human thought and feeling.

"Religion is something which touches us at every moment of consciousness, in every human relationship. The institutional church recognizes this immanent and universal pervasion of religion through every activity of life; with social intercourse, teaching, entertainment, recreation, organized charity, music, art, and the drama. The Christian spirit is to be felt deeply though unconsciously, in every human activity, becoming less a code applied to life, less a form or ceremony outside of life, and more a habit of life."

These ideas have led to a new conception of what is required in a church building. This new conception of the church building shall combine the grouping of educational, social, and religious facilities. It shall be a social center, an architectural composition of numerous rooms, various in size, arrangement and design. It must be a useful building, organized and designed like any other structure, in a straight-forward, simple, practical and economical manner.

The structure for the First Christian Church, Alhambra, California, designed by the author, was intended to meet all the requirements for the Institutional Church.

The auditorium, seating 600, has a large balcony and foyer, secretary's rooms, devotional and sacristy, baptistery and robing rooms, choir and robing rooms. Simplicity and economy are the keynotes for its design and construction.

The Institutional Sunday School building, comprising all departments to make a complete working unit, was carefully studied and proportioned to facilitate the successful working and operation of the whole. The Sunday school was designed to care for and accommodate 900 pupils.

As economy was an important factor to be considered, the design selected was modern Colonial Spanish architecture, embodying simplicity in both exterior and interior treatment.

Because of the fear of earthquakes it was decided to build of steel and wood frame, cement stucco on heavy metal lath over sheathing, concrete foundations, composition roofing, lime plaster on the interior, amber and cathedral art glass in the openings. The decorative effect was obtained with staff work. Steel columns and plate girders make a rigid frame to support the wood floors for Sunday school and balcony in auditorium. The floor of the auditorium is of 4-inch concrete covered with waterproofing membrane and battleship linoleum. The baptistery is of concrete lined with Magnitex composition, with heavy plate glass at the front, set in a Kawneer store front frame.

By carefully eliminating all pockets in the auditorium and using a porous lime plaster carpet float finish, one can hear every word or sound in any part of the room.

A study of the plans will show some of the problems that have been solved in order to construct a building of this size on two city lots, and still maintain adequate entrance and exit accommodations for all departments.

SPECIFICATIONS

Modern Church — Alhambra, California

H. Monroe Banfield, Architect
Los Angeles, California

GENERAL SPECIFICATIONS
Class "D" steel and wood frame—stucco exterior.

EXTERIOR
Concrete and frame.

ROOF
Wood trusses—composition roofing.

WINDOWS
Wood casements.

FLOORS
Concrete and wood.

INTERIOR MILL WORK
Quartered oak in auditorium and pine in Sunday school.

INTERIOR WALL
Lime plaster.

DECORATIONS
Acid stain trim. French gray walls, washable wall tint.

HEATING
Gas radiator.

VENTILATION
Exhaust fan.

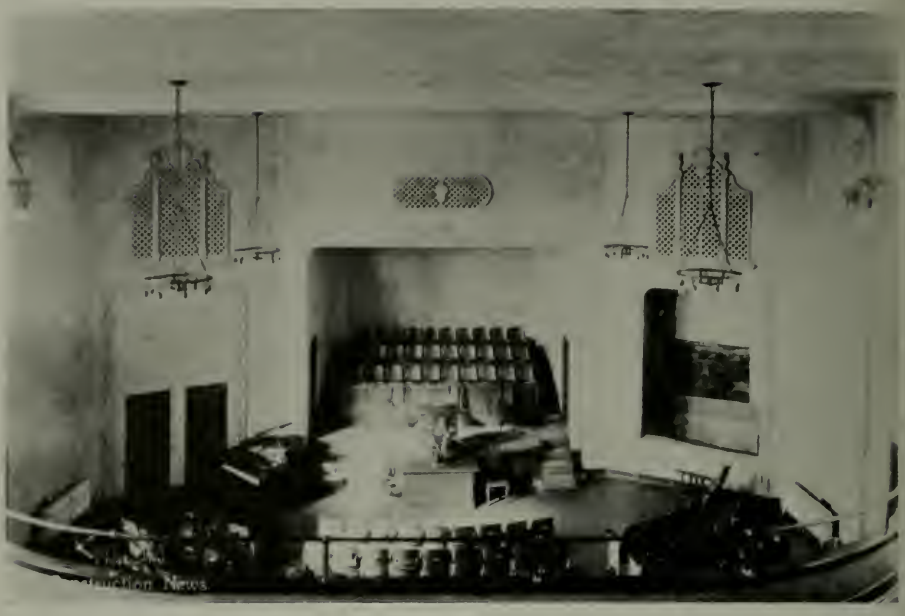
PLUMBING
Porcelain enamel fixtures.

ELECTRIC WORK
In conduit.

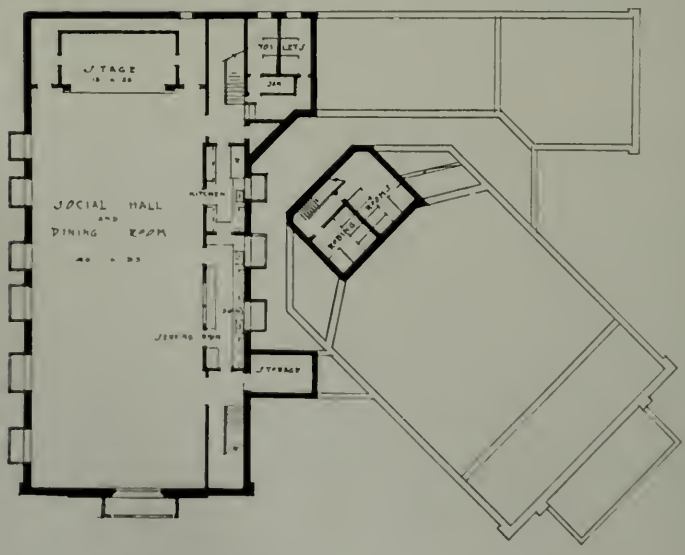
FIXTURES
Wrought iron and semi-indirect.

Approximate cubic footage	397,260
Cost per cubic foot	$ .20
Total cost	79,452
Year of completion	1925

SKETCH, FIRST CHRISTIAN CHURCH, ALHAMBRA
M. Monroe Banfield, Architect



CHOIR LOFT AND PULPIT, CHRISTIAN CHURCH, ALHAMBRA
H. Monroe Banfield, Architect



· GROUND · FLOOR · PLAN ·
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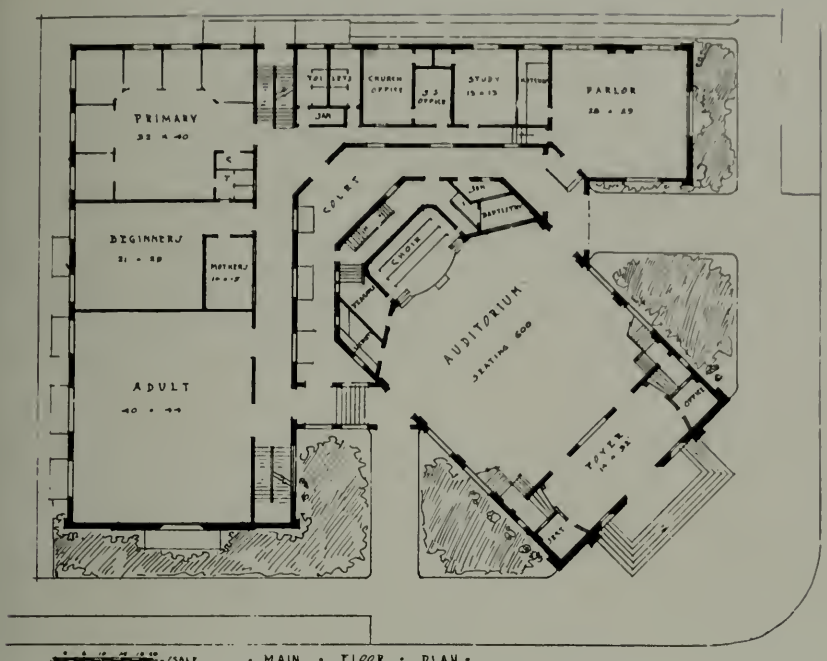
· H · MONROE · BANFIELD · ARCHITECT · L·A ·



· MAIN · FLOOR · PLAN ·
· FIRST · CHRISTIAN · CHURCH — ALHAMBRA · CALIF ·
· H · MONROE · BANFIELD · ARCHITECT · L·A ·
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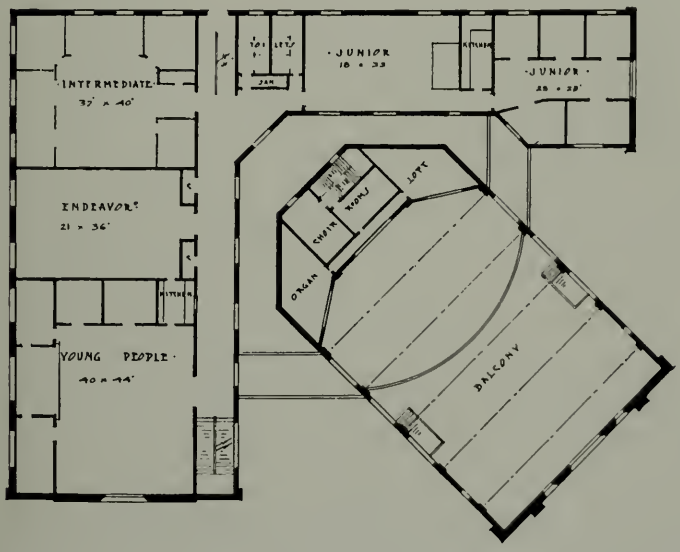

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Steel Joist Construction

By V. S. PERSONS, C. E.

THIS article is not written in criticism of present accepted types but for the purpose of securing a better understanding as to the particular field in which a type of construction is the most practical and with a view of showing by comparisons its adaptability. It is good engineering practice to accept and use those materials which under given conditions will most efficiently and economically meet the requirements. In the history of building materials there is no one material which has proven universally the best, and engineers have adopted a combination of those materials best suited for the problems at hand. The practicability and durability of steel construction, whether it be heavy or light sections, is derived from a thorough understanding of steel construction under high temperatures.

Steel joists were designed primarily to take the place of wood joists and studs in floor and partition construction. The use of metal lath, which is secured to the steel sections by means of spring lath clips over the flanges, provides a construction which entirely eliminates combustible material. The result is a light weight, firesafe and permanent building at slightly increased cost over that of wood.

The value of steel joists in reducing the enormous annual fire losses and the economic necessity of bringing the cost of fire-resistive construction within the range of the average individual has been evidenced by the rapid and substantial growth of the demand for steel joists. Steel joists are manufactured from a high quality basic open hearth steel, rolled from the slab to the finished product under strict supervision and inspection. The sections can be furnished in any length, thus eliminating all splicing. As the strips receive even rolling and are of uniform thickness over the entire width, they come from the mill perfectly flat, showing the absence of internal stresses.

In a wood joist, we have a section which has been used effectively from a standpoint of strength and adaptability, but not from a standpoint of the economical use of material. The wood joist proves low in cost, only on account of its ease of production, but this condition is rapidly changing, and wood joists are becoming more expensive and questionable in quality. If the wood joist could be substituted by a plate of steel placed on edge, with the same strength but less weight, efficiency would be readily admitted. This is substantially what has been done in producing steel joists, except that flanges have been added to produce lateral stiffness, serve as means of fastening finished floor and ceiling to the joist section, and contribute additional strength. An analysis of the wood joist shows that the tension, compression and shearing stresses are resisted entirely by what may be termed a web section, or what corresponds to the web section of a steel joist or a rolled beam.

The rolled steel beam of equal depth performs its function in a different way than the wood joist. The top flange, bottom flange and web are designed to resist compression, tension and shearing stresses, respectively. In producing the standard rolled steel section, it is impossible to have every portion of the steel making up the section, receive the same amount of rolling, due to the method employed. This results in a condition of internal stress causing deformation and distortions until the stresses in the steel are either in equilibrium or the beam fails. An analysis of the rolled steel beam will show that the flanges contribute 44 degrees. Since the bottom flange is the one most likely to be sub-

jected to excessive temperature, and since this flange is required to resist tension stresses, it is the practice to provide at least two inches of fireproof protection.

A steel joist shows a different condition prevailing. The web contributes a large percentage of the resisting inches or section modulus. In the steel joist, the web contributes 40 degrees, the flanges 30 degrees each. It is readily seen that the bottom flange is not of such importance as is the case with the rolled steel beam. The protection of the flange with approximately 7/8 inches of plaster produces a result which is equal to the protection of a rolled steel beam with two inches of fire-resistive material. In addition to this, the steel joist is free from internal stresses due to equal rolling and thickness, and consequently will not twist and distort under high temperatures. By application of the floor and ceiling to the flanges of the joist the web is surrounded by a dead air space, which is the best method of insulation.

Steel joists are efficient from a structural point of view for any class of building, such as hotels, office buildings, apartment houses, hospitals, garages, schools and residences. The limit of stories that can be erected depends only on the structural supports.

The details for framing steel studs around door and window openings are very simple, being practically the same as those for wood construction. The sill and cap plates at the bottom and top of the partition studs are special channel sections formed a little oversize so that the ends of the steel studs will fit in between the flanges. This connection is made secure by riveting or bolting through flanges of the cap or sill plate and the flanges of the studs.

The lintels over door openings or at top and bottom of window openings are the same special sections as are used top and bottom of partitions. They are connected to the studs at the sides of opening by angles. Short studs below or above openings are connected in same manner as ordinary studs.

For wide openings where the load applied is enough to cause more than allowable deflection over openings, tension members of No. 8 wire, doubled, are placed from the center of special channel immediately above the opening to the upper ends of studs at sides of opening. These double wires being twisted taut provide the necessary bracing to take care of excess loading.

For small openings the space of joists can generally be increased enough to take care of the opening. Where the opening is too large to handle in this manner, a header must be placed supporting the end of one joist.

The cost of steel joist construction is slightly more than wood frame construction and cheaper than concrete.

The Santa Barbara Building and Loan building, constructed in accordance with the manufacturer's specifications for steel joist construction, came through the recent earthquake without damage or visible cracks.

* * * *

State Board of Architects

Governor Friend W. Richardson will be asked to make appointments or reappointments on the California State Board of Architecture before he relinquishes the reins next spring. The terms of nearly all of the members, both Northern and Southern Divisions, have expired, and unless action is taken by Governor Richardson, the future destiny of the Board will be in the hands of Richardson's successor.

Failure of Architect to Submit Plans in Conformity with Building Regulations

By LESLIE CHILDS

BY the weight of authority, an architect in preparing plans for a building impliedly contracts that the plans will support the erection of a building, in accordance with the local building laws and ordinances. In other words, under a general contract of employment, where the architect knows where the building is to be erected, his plans must provide for a building that can be legally erected or his obligations under the contract will not be discharged.

But whether or not the submission of plans defective in this respect will justify the discharge of an architect is a question of another color. And, since each case of this kind must necessarily be decided in the light of its facts and circumstances, the subject cannot be covered by a general rule. However, as an example of judicial reasoning on the question, the California case of Davis vs. Boscou, 237 Pac. 401, is worthy of examination.

In this case the plaintiffs were employed as architects to prepare plans and specifications for the erection of a one-story building in Stockton, California. Subsequently the defendant, owner, decided to build three stories, and directed the plaintiff to prepare plans for the erection of a building of this height.

The building as finally agreed upon contemplated the renting of the lower floor for store purposes, and the upper stories for a hotel. The plaintiffs prepared the plans, but when the owner attempted to obtain a tenant it was discovered that the plans violated certain provisions of the Housing Act, as well as an ordinance of the city of Stockton.

As gathered from the report, the main fault was that the rooms designed for use as a hotel were too small, under the Housing Act, to permit their occupancy by more than one person. These defects were pointed out to the plaintiffs, and after a conference with the owner, the plaintiffs undertook to amend the plans so as to accord with the statute and ordinance. Following this, and while the plaintiffs were amending the plans, the defendant wrote them a letter as follows:

"I am returning, under a separate cover, blue prints and specifications prepared by you for a store and hotel building. My reason for the return is that the building designed by you is not suitable for use as a hotel, by reason of the fact that the rooms, as laid out by you, are too small. That under the state Housing Act, two persons cannot occupy any room in the proposed building.

"There are certain other provisions in the plans and specifications which are likewise objectionable. For the reasons above noted, the building, as designed by you, cannot be used for the purpose designed by me. Inasmuch as these plans have required over two months for preparation, it will be impossible for me to wait until new ones are prepared as an entirely new design of the building must be made."

Upon receipt of this letter, the plaintiffs brought the instant action to recover a reasonable fee for the services performed in drawing the plans and specifications. This then put in issue the question of whether or not the defendant had, upon the facts as outlined, the right to discharge the plaintiffs and be free from liability for services rendered.

The evidence upon many of the questions raised was in conflict. The defendant insisted that he was justified in returning the plans. The

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plaintiffs, on the other hand, took the position that the necessary changes in the plans could have been made in three days time, and that they were engaged in amending the plans when they received defendant's letter discharging them. On this conflicting evidence the trial of the case resulted in a judgment in favor of the plaintiffs for $1,950 for services rendered. The defendant prosecuted an appeal to the higher court, and here in reviewing the record and affirming the judgment the court, in part, said:

"The evidence set forth in the transcript shows that the plans and specifications at the time the defendant wrote the letter, which we have herein set forth, failed to comply with the building laws of the state and ordinances of the city of Stockton in the particulars pointed out by the defendant, but the findings of the trial court, sustained by the evidence, that the plaintiffs were engaged in correcting and amending the same at the time of their discharge, * * * relieves us from the necessity of considering the various instances in which the plans and specifications are said to be violative of the law of the state.

"So far as the record shows, it does not appear that the defendant ever gave any specific directions as to the exact kind of building he desired to erect. It appears generally that he wanted a building with a maximum number of rooms, and a building that would yield a certain percentage on the investment. Further than that it would seem that the arrangement of the building and all the details as to the plans and specifications were left to the plaintiffs.

"The trial court found that the work performed by the plaintiffs was, as far as the same had been completed, skillfully and properly performed, and it could not be said, as a matter of law, that the plans and specifications when finally completed, would not have complied with the law. * * *

"It is strongly insisted that there is no testimony supporting the finding of the court that the plaintiffs, at the request of the defendant, were making alterations in the plans to conform to the state building laws. The testimony does show that the plaintiffs stated that they would proceed with the work of making the change, or changes, necessary, and that the defendant promised to come back the next day to see the amended plans, but that he never returned, from which the court would be entitled to draw the inference that the plaintiffs were proceeding to correct the plans to make them conform to the legal requirements.

"While the trial court, upon the testimony introduced, might have come to a different conclusion, we think that there is sufficient testimony to support the findings, as made, and that the judgment of the trial court should be affirmed. It is so ordered."

The foregoing California decision is obviously a borderline case on the question involved, and since it was decided solely on its particular facts, it can hardly be made the basis for the statement of a general rule on the subject treated. However, when its facts and holding are taken together, the decision presents a worth-while illustration of judicial reasoning on the question involved that may prove of interest, and perhaps profit, to architects in general, in the practice of their profession.

Architectural Autopsies

Skyscrapers Being Razed Should Be Studied for Defects So Remedies May Be Discovered and Applied

By ALFRED C. BOSSOM, Architect, New York

THOSE distinctively American architectural creations, the skyscrapers, are now being studied with a view to making them ready for long effective life. The adoption of zoning laws in many cities, limiting the height of buildings in accordance with the width of surrounding streets or the areas of parks or squares on which they face, naturally make for giving to the skyscrapers a more permanent form.

Certain of the earlier skyscrapers have been torn down to make room for new ones, which yield a larger revenue. This has been going on for some years, and still continues, although the number removed for economic reasons will decrease.

To obtain full information concerning the effect of time on their steel frameworks, the suggestion is made that skyscrapers undergoing demolition be carefully studied by experts.

In this way it is believed that improvements in construction may be developed and additional methods devised for maintaining the structures in the best possible condition.

The architectural autopsies proposed include three lines of investigation:

First, The condition of the steel itself;

Second, The durability of the paint;

Third, The protective effect of the concrete or mortar or brick with which the steel members are surrounded.

That steel in the course of years is subject to molecular change of re-crystallization, is generally recognized. What would take place in the course of many decades? What is the effect of the constant vibrations of traffic in adjacent busy thoroughfares? How are the molecules of these steel members affected by the rumbling of the trains which course through the subways under their very foundations? All these are subjects worthy of thorough consideration and investigation.

All the steel construction work which is directly exposed to the action of the atmosphere, as has been repeatedly demonstrated, is subject to corrosion. The first Brooklyn bridge, for example, which has stood for so many years, has been constantly painted during all that period, and here and there parts of it have been renewed. Despite all the efforts to preserve it, the mordant effect of the atmosphere cannot be absolutely overcome. In large cities, such as New York, the structure of the elevated railroad is being constantly cared for and so many new parts installed on account of corrosion, etc., that it may well be said that parts of these elevated ways have been rebuilt since their installation.

While the frame work of the skyscraper of today has no such direct exposure to the elements as does the Brooklyn bridge, none the less its steel work is quite conceivably vulnerable. The skyscraper's shell of brick or masonry is not always as impervious to weather as it may seem to be. There are tiny chinks in its armor which appear small enough to the eye, but which may permit an invasion by the forces of corrosion.

The observation in recent years seems to show that where steel work has been thoroughly painted and surrounded by a shell of firm concrete, it is very likely to endure without oxidation or damage. But can we be absolutely sure? Is the concrete around the steel always

perfect? Not always, I am afraid. It is not absolutely waterproof and there is a possibility of trouble with it. We do know that where concrete is used in which there are cinders, the sulphur in the cinders may have a detrimental chemical action upon the pipes embedded in it. The building codes of our various cities are not uniform. In some municipalities it is permitted to fireproof the steel frame with concrete or with brick, or with burned terra cotta blocks, for example. Which is best? What can be learned about the relative value of these protections of the steel skeletons?

The answers to all these questions that I have raised may certainly be found if the Bureau of Buildings, through its skilled inspectors, sees to it that facts bearing on the durability of the materials of which skyscrapers are made, be gathered every time an important steel frame structure is razed. A post mortem report on these skyscrapers when demolished would be of the greatest value. The profession of medicine owes many of its triumphs in curing disease to the dissection of the human body. The architect, the engineer, the builder, would gain much valuable information if there were reports available as to the exact condition of every skyscraper which is relegated to the scrap heap and the wreckers' yard. Superintendents of the Building Department of our large cities, by such investigations, would also assemble a great body of facts which would greatly aid them in preparing new building codes. Architects, engineers, building superintendents, meeting in a committee, could discover many principles with so many facts from architectural autopsies at their command. What a wealth of information would come from such inquests as these!

Such investigations carried on in the physical laboratory with specimens of steel sawed from the beams of deceased skyscrapers would show definitely what molecular changes, if any, had taken place since those skyscrapers were new. The effects of vibration from traffic, if any, might be studied out for the guidance of those who prepare tables showing strains and stresses of the bones of the steel skeleton.

This would require much labor and constant study, there can be no doubt, and undoubtedly a few additional technical experts would have to be employed by city building departments, and yet, would such an expenditure be well justified by the results?

Many millions of dollars are being spent every year for the creation of huge buildings, towering thirty and forty stories in height and tenanted by thousands of persons. Upon the durability of such depends not merely the earnings on the capital investment, but the welfare of the multitudes who transact their business or live within those walls.

The writer does not wish to sound a note of alarm, but he thoroughly believes that the time has come when there should be a more and, if he may say so, a definite scientific study of the problem of protecting the skyscraper against the inroads of the elements and the interworkings of physical laws.

Having once obtained the benefits of these architectural autopsies, how shall we apply them? Besides using the facts gained in the formulation of whatever changes in building codes may be indicated in the interests of the community, these facts would also serve for the guidance of those who might be called upon to inspect the modern skyscraper. It is not the intention of the writer to urge an undue annoyance or surveillance upon the owners of buildings, and yet it seems that a careful inspection of the steel of a skyscraper, at least every ten years,

would be of decided benefit. Naturally, it is always customary to have an immediate inspection by the Building Department when any serious defect has been noted of marked evidences of deterioration, but such an inspection may be like locking the barn after the horse had been stolen. Surely a periodical examination of the building is just as essential to its efficiency as a periodical examination for a human being every year whether he is complaining of actual disease or not, is now regarded as being one of the mainstays of progresive preventive medicine. Such an examination could be conducted without interfering with the functions of the building, for nothing would be easier than to knock away a little concrete in a column in a cellar or a sub-basement, especially if it were suspected that conditions were rather damp down there and to see just exactly how the steel skeleton is standing up. Surely the outside of the walls should be carefully looked over so that through no unpointed seams there may penetrate even minute quantities of moisture. Even when the steel skeleton is well painted, the constant invasion of wet carried on through a period of years, is likely to make trouble in any form of steel construction. With the progress in the taking of X-ray photographs, a machine might be developed for the examination of steel members covered with concrete or masonry without removing the coverings at all.

In some buildings, particularly those of speculative nature, or where there may not be good inspection, pipes intended for steam or water often come in very close proximity to the steel columns and girders and cut over floor beams. These are often covered up when the building is finished and it is assumed that there is no seepage or leakage from them. This assumption may not be accurate, for not long ago when a building was pulled down a bulge of several inches was noticed in one of the exterior walls, which proved to be caused by leaking water. Certain flanges had been rusted enough to cause them to bend under the super-imposed load.

As a matter of fact, a slight leak develops in some pipes or abnormal condensation takes place around them, and this finds its way to the columns or girders and may puncture the protective paint that has been placed around the steel frame at the time of its erection. In another case in a building recently where the joints of the brick walls had been badly pointed up, the rain penetrated the masonry to the extent of causing the flanges of the steel frame to so rust that eventually some of these were more supported by the masonry than the reverse. The walls, of course, slightly cracked, due to weakness. The crack was observed and its warning heeded, so part of the wall was taken down and the steel work reinforced. Had this not been observed, or had the weight been tremendously excessive, it is well within the realm of possibility that more serious trouble might have resulted.

In view of the conditions, such as these, the writer feels that it would not be unreasonable to have the steel work of the skyscrapers inspected from time to time after their erection. It would not, of course, be possible to tear the outer covering of all of these metallic supports, but it would not require so much trouble to remove certain sections of the protective work, at strategic points, say every ten years, wherein an inspection would reveal if deterioration were taking place. If there were periodical inspections of this nature, everyone would feel reasonably sure that we were guarding against a possible trouble.

Closing Cracks in a Concrete Bridge

THE penetrative and destructive powers of sea air on certain types of concrete work were exemplified recently on a California bridge and interesting repair work was made necessary because of the ravages. The bridge spans Santa Margarita river and is on the coast highway north of Oceanside, San Diego county. Engineers of the State Highway Commission, on an inspection tour, found that many cracks had appeared not only in the deck and railing but in the girders. The bridge is on the beach and tidewater washes back and forth beneath it. Consequently the air is always moist and salt.

The result was that the concrete was penetrated by the moisture to a considerable depth and rust had formed on the reinforcing steel bars which were presumed to be placed a safe distance beneath the surface. As the rust takes up much more space than steel, considerable swelling followed and the cracks began to show.

The engineers decided that the deterioration was more marked than in present-day construction because the bridge was built some years ago and the concrete was not of the strength required in modern structures. They reported that a complete waterproofing job was necessary.

All parts of the bridge exposed to the air at the top and sides were painted with Stonetex, a moisture proof paint, which in color, texture and effect is much like concrete and has an affinity for it. The lower part of the bridge, including girders and supports, received a coating of petrolastic cement. This mixture is asphalt blown by air, and is found to have more elasticity and consequently more durability than asphalt blown by steam.

A paint sprayer with two air-brushes was used to put on the petrolastic cement. All airbrush work was completed before any of the hand painting was done, to avoid possibility of marring the hand work by spattering.

The petrolastic cement was reduced to the proper consistency for application first by heat and then by the mixing in of a liquid thinner which contained 25 per cent of benzol to 75 per cent of mineral spirits. Experiments proved that the best mixture was two parts of the cement to one part of thinner.

The cement was applied as liberally as was necessary to seal the cracks. Over most of the surface only one coat was applied. In some places, however, the breaks were quite marked, and this area was given a second coat. Exhaustive tests revealed, after the cement had dried and hardened, that it gave a smooth and resistant waterproof covering. The requirements were about $\frac{3}{8}$ gal. per sq. yd.

Where it was possible to use it, the men operated the air-brushes from a raft. Under some of the spans, however, because of obstructions, a scaffolding was used, being hooked to the bridge railing and suspended over the water. The piers did not require waterproofing and were covered with canvas to avoid spatters of the petrolastic.

The larger cracks on the upper parts of the bridge were first filled with a special filler. Then two coats of the Stonetex dampproof paint were laid on with hand brushes. Time and pains were taken with the first coat, so that it could be brushed well into the pores of the concrete. For this coat, a liquid thinner was used in the proportion of 1/6 of the volume of the paint. The second coat, applied after three days had been allowed for drying, was not thinned. A gallon of the paint gave approximately 10 sq. yd. of surface two coats. This painting experiment proved a complete success.—Concrete.

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IN OUR AUGUST number we neglected to mention that the very beautiful photograph of Michigan avenue, Chicago, used as the frontispiece, (as well as the equally splendid Chicago views on pages 64 and 65) was the work of Shoji Osato of Chicago.

Mr. Osato was a resident of San Francisco some twenty years ago but is now of Chicago. His portrait photography and painting attracted much attention in his native country, Japan, and in this his adopted country. Five years ago Architect Fitzpatrick persuaded him to go into architectural photography which he now does exclusively and is rated as one of the three best in the United States.

FIRES IN "FIREPROOF" BUILDINGS

Although about eighty-five per cent of all the buildings in the United States are of frame construction, and a large part of the rest are forty-five per cent lumber, the public whose savings are invested in buildings of this sort, has unfortunately accepted a widespread notion that other forms of construction have the advantage of being "fireproof." According to the magazine "Fire Engineering," which publishes an article reviewing the recent disastrous fires in "fireproof" office buildings in New York City, the term "fireproof" is most unfortunate. It discusses the subject editorially as follows:

An important truth is constantly being emphasized by the experience at fires occurring in so-called "fireproof" buildings, which are not what their name implies. In other words that, while they will not burn DOWN, they will burn OUT.

This fact has been demonstrated in several more or less recent occurrences, in some instances in fires arising from outside exposure, as in the notable case of the Burlington building in Chicago, a few years ago and in later ones; and again from the contents, inflammable in their nature, becoming ignited and the fire spreading through ventilating shafts and other openings to other floors, where more burnable material is stored.

No matter how fire resistant the structure itself may be, it is only as FIREPROOF as its contents. If the contents are inflammable, there is just as likely to be a hot and severe fire in the "fireproof" building as in that of less resistant construction. And sometimes such a fire is even harder to control, owing to the fact that the building is higher and less accessible to the fire department in the upper floors, than a non-fireproof structure would be.

The term "fireproof," as applied to buildings, is very deceiving, and its use should be discouraged, as it naturally gives those not well informed in the matter, a false sense of security which is dangerous in the extreme.

A much more sensible and certainly truer term is that of "fire resistant," which tells the story of the modern building, and emphasizes its advantages, without exaggeration.

"Fire Engineering" calls attention to the fact that the New York Underwriters' representative, in commenting on one of the New

York "fireproof" fires, points out that the use of the word "fireproof" gives "a false sense of security." The committee explains that where buildings are of fire resistive construction they can and do burn out. "A building may be able to resist fire with safety to itself, but when it contains combustible contents the damage is likely to be severe."

The Underwriters conclude that automatic sprinklers ought to be installed in "fireproof" office buildings, as well as other buildings. In this connection, construction engineers have pointed out, buildings of heavy timber (mill) construction having automatic sprinklers are equal in practical fire resistance to those of masonry construction. A large degree of fire resistance can be easily built into any edifice, but even a building that does not burn down is not necessarily fireproof as to contents or even to the integrity of its own structure.

FEDERAL BUILDING ARCHITECTURE

Architects seem to be in mortal fear of being unethical, says a writer in the Washington State Architect. One result of this attitude would seem apparent in the fact that there is a shortage of applicants for work in the $165,000,000 program for federal buildings. Wide advertising is reported to have brought few applicants.

The salaries offered, $3,800 being the highest, are the reason. However, it would seem time that the architects themselves took a hand, and that they insist upon sufficient remuneration being offered to attract good men.

People of other countries must of necessity gage our taste and culture from the federal buildings they see. Why not have these buildings architecturally representative of the efforts of learned men?

Most of the federal buildings outside the Capitol City are anything other than comfortable to work in, convenient to approach, or pleasing to view. They look as though they were cast from a mold and tossed out, regardless of whether they are in the cool Northwest or the torrid border near Mexico. The temperature of the draftsman who hustles the plans seems to govern the whole.

Would it not be time well spent for a few architects to get together and educate the powers that be in this important matter?

IN MEMORY OF DONNER PARTY

Completion and opening to traffic of the Donner Summit bridge and new section of the California State highway over Donner Summit took place during the latter part of August. This bridge, with its observation platform, was dedicated to the memory of the Donner party and the pioneers who came by this route into the Golden State. The starvation of half of the membership of the historic pioneer party, while encamped at Donner Lake, is the most terrible tragedy in California history. The orders of the Native Sons and the Native Daughters presided at the dedication of this bridge. The ceremonies included unveiling of a memorial plaque constructed as a part of the bridge. From the bridge may be viewed the formidable granite cliffs surrounding Donner Lake, up which three successive roads have been built, the last being the new State highway blasted from solid rock to provide an easy grade for the three mile climb from Donner Lake to the Summit.

Donner Summit bridge spans a chasm, not a stream, its construction being necessary to provide a seven per cent grade up the mountain. Its location is not far distant from the point where members of the Donner party were forced to turn back, in October, 1846, in their effort to reach the Sacramento Valley, and for this reason it was deemed fitting by the highway commission that the bridge,

which is destined to be a popular stopping place, be dedicated to their memory and that of other pioneers who followed in their footsteps.

RESTORING OLD WOODEN CHURCHES

The oldest frame church building in the United States, if not the oldest church building of any sort within the original English colonies, is a Quaker meeting house of Easton, Maryland, which dates from the middle of the seventeenth century. But England now reports a wooden church that goes back to the twelfth century, or possibly earlier.

The Manchester (Eng.) Guardian states that an appeal is being made for a fund of ten thousand dollars with which to repair "the ancient timber-framed Church of Warburton, Cheshire, as a memorial to the late rector, the Rev. Geoffrey Edgerton-Warburton." This church, the Guardian continues, has never undergone systematic restoration, and apart from some external repairs and extensions, it remains almost as it was built. It is one of the best examples of the old wooden churches that have survived in England, says the Guardian. In 1883 an entirely new church was erected within the parish, and the old church has since been used mainly for burials, the churchyard around it being the only one in the parish. The chancel roof and much of the timber-framing and stonework are now in a deplorable state.

READING WITH A PURPOSE

"The severe athletic lines of the Brooklyn bridge are many times finer than the birthday-cake'Gothic' of the Woolworth tower," according to Lewis Mumford, author of a reading course on architecture recently published by the American Library Association. "One shows a plain honest face, the other a weak mask." "Beauty," he says, "is not something that can be arrived at directly; it is rather what follows when the architect's skill and taste and understanding are devoted to fulfilling the immediate purpose of a building."

Mr. Mumford is the author of "Sticks and Stones" and associate editor of The Dial. His reading course on "Architecture" is the seventeenth in the "Reading with a Purpose" series. Louis Sullivan's "The Autobiography of an Idea" is one of the half dozen books the course recommends to help the reader get "a sense of architecture as a living contemporary thing."

The books recommended in the course, as well as the course itself, are available at most libraries.

Innovation in Architectural Instruction

A selective school of architecture reviving the practice of great masters of the Renaissance in providing for the restriction of advanced courses to students demonstrating special aptitude in architecture, is the innovation which will be instituted at the University of Pennsylvania this fall. Announcement to this effect was made by Dr. Warren P. Laird, Professor of Architecture, and Dean of the School of Fine Arts of the University.

"For many years the University of Pennsylvania has maintained at high standard the traditional method of teaching architecture," said Dr. Laird in commenting upon the new undertaking. "At the urgent suggestion of its architectural alumni and to the end of being of greater service both to the profession and to the individual student, the University has decided to undertake a unique step in the history of architectural instruction.

"The vital principle of all teaching of the arts is that of direct, personal contact between pupil and master, notably exemplified in the Renaissance, and faithfully employed in all successful, modern architectural schools. But during the Renaissance the master chose his pupils—as indeed did the late Howard Pyle in forming the small class to which his teaching was confined—whereas the modern architectural school has admitted and promoted, to the limit of its physical capacity, all students who could pass its scholastic requirements. These are admittedly high in our American schools but the process permits the diligent plodder of only fair architectural capacity to earn his diploma and pass into professional ranks.

"But hereafter at the University of Pennsylvania architectural students will be chosen for the upper course rather than promoted to it; chosen after a fair chance has been given them in a lower course to demonstrate clearly a capacity to do well in this study."

With the Architects

Building Reports and Personal Mention

Architects Busy

Architects C. O. Clausen and F. Frederic Amandes, Hearst building, San Francisco, report considerable new work on the boards. Plans have just been completed for a three-story apartment house to be erected on the northwest corner of Laguna street and Birch avenue, San Francisco, for R. Paratore. The building will have 24 two and three room apartments. The same architects have prepared plans for a ten-story steel frame and concrete apartment house to be built at Hyde and Greenwich streets, San Francisco, for J. Greenbach and associates. Plans are being prepared for a Class A theatre and store in the Western Addition which is estimated to cost $125,000. This firm has considerable other work on hand, including an office building and another large apartment house.

Six-Story Apartments

Architect Chas. E. J. Rogers has completed plans and a contract has been let to the F. R. Siegrist Company of San Francisco, for a six-story steel frame and brick apartment house at Pine and Quincy streets, San Francisco, for Mr. Poy. Building will cost $215,000. The same contractors will build a one-story brick commercial garage at San Pablo avenue and Bancroft way, Berkeley, and they are also low bidders at $23,277 on the new Berkeley branch library building.

Five Million Dollar Hotel

Preliminary plans have been made by Architects Weeks & Day, 315 Montgomery street, San Francisco, for a Ritz-Carlton hotel to be built on the block bounded by Gough, Washington and Clay streets, and Lafayette square, San Francisco. The main structure is to be seventeen stories with a thirty-story tower. The project is being financed by Louis R. Lurie and the hotel is said to be leased to George McInney of the Ritz-Carlton hotel, New York City.

Colonial Apartments

Architect W. E. Schirmer of Oakland, is completing plans for a six-story steel frame and brick Colonial apartment house to contain six stores and 96 rooms. Estimated cost is $110,000. Mr. Schirmer has awarded contract for a brick veneer store building for D. Denniston and has prepared plans for several English type residences costing from $10,000 to $20,000 each.

Architectural Designer Wanted

The California State Civil Service Commission will hold an examination for the position of Architectural Designer, Bureau of Architecture, State Department of Public Works, San Francisco. The salary for this position ranges from $285 to $350 a month. The examination is open to all American citizens in good physical condition between twenty-one and sixty-one years of age. The duties of this position are under general administrative and technical direction to exercise independent architectural judgment and assume responsibilities in studies and computations necessary for the preparation of designs and estimates; to design and plan important buildings and groups of institutional buildings, etc. Application blanks and complete information may be obtained from the State Civil Service Commission, room 331, Forum building, Sacramento, Cal.

Designing Apartment Houses

Architect Clay N. Burrell, American Bank building, Oakland, has completed plans for eight stores and four apartments in the Pueblo type of architecture at Hopkins and Calaveras streets, Oakland, for Nat. Crossley; also a four-story, 70-room hotel on 12th street, Oakland, for Sommarstrom Bros. and a private hospital and physician's office building, to cost $40,000 on Broadway near 40th street, Oakland.

D. A. Cannon Injured

D. A. Cannon of the Cannon Brick Company, Sacramento, had a misfortune to be thrown from his automobile on the last day of his vacation and for two weeks was a patient at the Sutter hospital in the Capitol City. Fortunately, the injuries were not serious and Mr. Cannon hopes to resume his business activities within a short time.

Addition to Rubber Plant

Architect Benjamin G. McDougall, 393 Sacramento street, San Francisco, has completed drawings for a large addition to the Pioneer Rubber Company's plant at Pittsburg, Contra Costa County. Structure will cover area 110 x 300, and will cost $100,000.

Sanitarium to Build

The Dante Sanitarium, 1590 Broadway, San Francisco, will erect a new building from plans to be selected in an informal competition by Willis Polk & Company, Hyman & Appleton and I. Zanolini.

Los Angeles Architect Busy

Architect William Bruce of 315 W. Ninth street, Los Angeles, has recently been commissioned to prepare plans for a thirty-story apartment building in New York City for Charles Golliers of Holland. The building will be electrically equipped throughout. The estimated cost of the structure is $2,750,000. The same architect is preparing working drawings for a four-story brick hotel on Albany street, between Ninth and Tenth streets, Los Angeles, to cost $450,000.

Designing Many Theatres

The firm of Starks & Flanders, Sacramento, is busy on plans for four large theatres, one in Sacramento, one in Chico, one in Marysville and one in Oroville. The last three-named playhouses are for the Valley Empire Theatres Company. They will represent a total expenditure of more than $500,000. The Sacramento theatre is for the Granada and a contract for the structural steel has already been let to the Schrader Iron Works, San Francisco.

New Fox Theatre

The architectural drawings for the new Fox theatre at Market, Hayes and Larkin streets, San Francisco, are nearing completion in the office of Architect Lamb, New York City. The Bank of Italy Corporation is financing this project. The structural steel contract has already been awarded. Theatre will have the largest seating capacity of any theatre in San Francisco,approximating close to 4000.

Designing Many Buildings

Architects Dean & Dean, California State Life building, Sacramento, have more than one million dollars in new work on the boards, including the following: Galt Union High school, Galt, $100,000; Shasta Union High school, Redding, $300,000; Westminster Presbyterian church, Sacramento, $300,000; Y. M. C. A., Sacramento, $200,000; Knights of Columbus building, Sacramento, $150,000.

Auto Sales Building

Architect Albert H. Larsen, 447 Sutter street, San Francisco, has completed plans and a contract has been let to Barrett & Hilp, for a one-story reinforced concrete auto sales and service building to be built on Mission street, south of Army, San Francisco, for the Robert A. Smith Company. Cost is estimated at $60,000.

Stockton Mausoleum

Architect W. J. Wright of Stockton has completed plans for a mausoleum for St. Mary's Parish, to cost $100,000. Construction will be of concrete, Indiana limestone and marble.

Passing of Frank D. Wolfe

The San Jose architectural profession has lost one of its pioneer members in the death on August 18th last of Frank D. Wolfe, senior member of the firm of Wolfe & Higgins. Mr. Wolfe died in the Lane hospital, San Francisco, following an operation. He was 63 years old and a native of Ohio. Mr. Wolfe had practiced architecture in San Jose for more than a quarter of a century. He designed many public and commercial buildings as well as a great number of attractive homes in Santa Clara county. Prior to forming a partnership with Mr. Higgins he was associated with Charles McKenzie with offices in the Smoot building.

Besides his widow, Mr. Wolfe leaves a son, Carl Wolfe, who, with Mr. Higgins was associated with him in the business, a daughter, Mrs. Warren Rice; three grandchildren, Delos and Delores Wolfe and Sumner Rice; a sister, Miss Cora Wolfe, and a brother, E. L. Wolfe, all of San Jose.

Mr. Wolfe was a member of the Elks' and Odd Fellows' Lodges and of First Church of Christ, Scientist.

City Planning Commission

The Oakland city planning commission, which was re-established as an active body last October, is likely to go out of existence soon because of the small appropriation made in the new budget, Chester K. Hunt, city planning engineer, declares. On the $5500 allotted it, the commission can continue to function only until November, Hunt estimates. Since July 1, beginning of the fiscal year, it has cost approximately $2000 of the $5500 to carry on the commission's work. The amount requested in the budget was $17,500.

Addition to Office Building

A five-story Class A addition is to be built immediately to the Callaghan building, at the gore of Market, Jones and McAllister streets, San Francisco. Plans have been completed by Architect H. A. Minton, for the Capitol Real Estate Company. The entire structure is to be converted into a modern hotel of 138 rooms.

Shop and Office Building

Plans have been completed by Architects O'Brien & Peugh, 315 Montgomery street, San Francisco, for a $55,000 two-story reinforced concrete shop and office building at 12th and Folsom streets, San Francisco, for the California Electric Supply Company.

Designing Country House

Architects Ward and Blohme, 454 California street, San Francisco, are designing a $10,000 country house for Bradford Meldon, at Woodside, San Mateo county. The Spanish type will be followed.

Elimination of Fire Traps

Full co-operation of the Board of Public Works in any movement to cleanse San Francisco of dangerous "fire-traps" is pledged by Timothy A. Reardon, president of the board.

President Reardon added his name to the rapidly growing list of city officials demanding more rigid building laws as a result of the recent death of R. H. Cox in a fire in an alleged "fire-trap" lodging house at 777 Howard street.

Condemnation of property is in the hands of the supervisors, according to Reardon, rather than with the Board of Public Works. Quick action against dangerous buildings, he said, also lies in the hands of the Board of Health, which is empowered to close property to occupancy if the health laws are not strictly complied with.

Berkeley Auto Sales Building

Plans have been completed by Architect James W. Plachek, for a one-story steel frame and brick automobile sales building and garage to be erected at Adeline and Derby streets, Berkeley, for John W. Havens. The builders are Vogt & Davidson, who also have the contract to build a new warehouse for the Associated Oil Company at Alameda.

San Jose Bank Building

Contracts have been awarded by Messrs. A. F. Roller and J. P. West, Crocker-First National Bank building, San Francisco, for a two-story and basement steel, concrete and terra cotta bank building, San Jose, for the San Jose Building & Loan Association. The cost of the structure, including equipment, is approximately $100,000.

Los Angeles Factory

Architect Norman W. Alpaugh, 2404 West Seventh street, Los Angeles, has prepared plans for a three-story reinforced concrete factory on Redondo boulevard, for the Kroehler Manufacturing Company. This same firm will also build a new factory in San Francisco, from plans by the engineering department of the George Wagner Co.

Oakland Community Apartments

Plans are practically completed for a sixteen-story Class A community apartment house to be built at Grand, Euclid avenues and Burk street, Oakland, and estimated to cost $1,500,000. H. C. Baumann of San Francisco, is the architect. The building will contain ninety apartments.

Spanish Type Residence

Architects Willis Polk & Company, 277 Pine street, San Francisco, have prepared plans for a $40,000 Spanish type residence to be erected in Piedmont for Mrs. Wm. Bryce, Jr.

Building and Living Costs Compared

Of all the different building materials commonly used in the construction of dwelling houses, the wooden shingle has shown the least advance since pre-war years, according to the Monthly Review of Wholesale Prices of Commodities, issued by the U. S. Department of Labor. The price index of the most commonly used shingles has advanced only 33.2 since 1913, though some shingles have advanced 69.4 in the same period, and slate roofing 202.7.

Lumber, as a whole, has advanced 81.4 since 1913; common brick 104.3; cement from 68.4 to 96.6 according to location of the plant; lime 117.4; sand 63.5; crushed stone 94.4; and gravel 89.4.

All commodities have increased 50.7 in the last 13 years; building materials, as a group, 71.5. The latter figure is apparently not so high as might be inferred, because structural steel, virtually unused in dwelling houses, is included in the average.

In the same period farm products have gone up 40.8; foods, 53.6; clothing materials, 73.3; fuel, 77; metals and metal products, 26.2; house-furnishing goods, 61.1.

Hollywood League Bulletin A

The Architects' League of Hollywood has published Bulletin A entitled "Your Profit, Friend Architect, How About it?" It is a worth-while document and is entitled to a place in every architect's library. Copies may be had by addressing the League at 6040 Hollywood boulevard, Hollywood, and sending fifty cents.

Hollister Hotel

Plans are being prepared by Architect Edward E. Young, 2002 California street, San Francisco, for a four-story reinforced concrete hotel having four stores, 28 rooms and 15 offices at Hollister, San Benito County. The owner is J. R. Pendergraff.

Newspaper Plant

The Daily News Publishing Company has made arrangements with James H. Hjul to build a four-story Class B reinforced concrete newspaper plant at Howard and Russ streets, San Francisco, the building and equipment to cost $300,000.

One Hundred Thousand Dollar Residence

Mrs. Henry Dutton will build a large brick and terra cotta country house at Hillsborough, San Mateo county, from plans by Architects Gottschalk & Rist, Phelan building, San Francisco.

Piedmont Residence

Architects Newsom & Newsom have completed plans for a large stucco residence in Piedmont to cost $40,000 for E. I. Dyer.

Class in Concrete Design

An evening class in reinforced concrete design has been started at the Los Angeles Y. M. C. A. in charge of Prof. C. W. Cook, formerly of the University of Southern California, who has been conducting these classes for the past 12 years. This is a beginners' class and will make a study of strength of materials, including the design of beams, girders, columns, etc., in wood and steel and will then take up a complete course in reinforced concrete. The course will include the design of reinforced concrete slabs, rectangular beams, tee beams, double reinforced beams, various types of floor construction, flat slab "mushroom" construction, tables and diagrams based on Los Angeles ordinances, eccentric columns, retaining walls, stairs, chimneys, culverts, arches, lintels, tunnels, foundations, combined footings, piling and special problems.

Contractor Wants Ruling

A New Jersey contractor is in trouble and wants someone to dig up a court decision that will help him out of his dilemma. According to the story, the contractor was erecting a building on a cost-plus contract and before it was completed it was destroyed by fire. The owner decided not to rebuild and the contractor found himself in possession of a large amount of quartered oak paneling which he had ordered and paid for out of his own pocket and which the owner declared he did not need and refused to accept. Suit has been brought by the contractor to recover the cost of the material from the owner.

Personals

Architect Thomas F. Power's new address is 2615 West Seventh street, Los Angeles. It had been previously given as 2615 West Washington street.

Architects A. M. Edelman and L. W. Barnett of Los Angeles, announce the removal of their offices from 726 H. W. Hellman building to suite 824 of same building.

Architect A. C. Zimmerman has moved his office from 836 H. W. Hellman building to suite 824 of same building, Los Angeles.

Annual Alumni Banquet

Fifty members of the Architectural Alumni Association of the University of California enjoyed a banquet and entertainment at Stephen's Union on the University Campus, August 24th. Among the speakers was Robert K. Sibley, executive manager of the California Alumni Association.

Architect to Build Home

Architect R. W. Blaine, of Wythe, Blaine & Olson, is preparing plans for a Spanish type home to be built for himself in Forest Park, Oakland.

Architects Urged to Set Standard

Following the lead of the Louisville Chapter, A. G. C., in requesting architects to establish 3 P. M. as a standard hour for receiving proposals, the Dallas, Texas, Chapter, has recently addressed a letter on the subject to all architects in its territory. This letter, in addition to expressing the desire that a standard hour be set, also asks that the architects refrain from requesting proposals on Saturday, Monday, general legal holidays, and on days following general legal holidays.

It is understood that similar action is being taken in Tennessee.

If the hour of 3 P. M. is broadly accepted, there is a possibility that it might be made a national standard, according to those who are interesting themselves in the movement.

The text of the letter sent out by the Dallas Chapter follows:

"Believing that a uniform hour for closing bids would be highly advantageous to the building industry of this city, Dallas Chapter, A. G. C., officially requests the architects of Dallas to establish 3 P. M. as a standard hour for the tendering of proposals on building projects.

"The hour of 3 P. M. allows the contractor ample time to collect and analyze his sub-bids, particularly those which arrive in the morning mail, and affords sufficient time for a final recheck of the estimate before it is closed and the proposal tendered.

"It is also requested that no bids be called for on Saturdays, Mondays, legal holidays, or the day following a legal holiday. By legal holiday is meant only those which are generally observed, such as Fourth of July, Thanksgiving, Christmas and New Years.

"The difficulty encountered by a contractor in preparing a bid for submission on Saturday is obvious—Saturday is 'pay roll' day and jobs must be paid off by noon. To make a bid on Monday or the day following a general holiday usually requires that the contractor work on Sunday or the holiday, and also great difficulty is always experienced in getting sub-bids.

"In rare instances it may not be possible to observe these requests, but we believe, after a careful study of the situation, that architects can render a real service to the industry by observing 3 P. M. as a standard hour for closing the bidding and refrain from requesting bids on Saturdays, Mondays, general holidays, or the day immediately following a general holiday.

"We trust that you will co-operate with us in establishing this uniform practice."

Palo Alto Residence

Plans have been completed by Architect Joseph L. Stewart, San Francisco, and a contract has been awarded to a Palo Alto concern for a two-story and basement frame and stucco country house in Palo Alto, for Mrs. Sarah Blakey. The cost is $35,000.

Addition to Warehouse

Architect Lewis P. Hobart, of San Francisco, has been commissioned to prepare plans for a large addition to the Crane Company's warehouse and office building at Second and Brannan streets, San Francisco.

Labor Gets 60 Cents of the Building Dollar

THE August number of the National Lumber Bulletin points out that in 1925 cost of building material was relatively lower and labor costs relatively higher than in any year recorded, according to a building construction study in the July issue of the Department of Labor's Monthly Labor Review, based upon permit figures of 130 cities relating to new construction of all kinds, residential and non-residential.

The survey gives the following index numbers of costs of constructing a typical building, amount of building done and the ratio of cost of material to labor:

Year	Cost of Constructing a Typical Building	Amount of Building Done	Ratio of Cost of Material	Ratio of to Labor
	(1914—100)			
1914	100	100	44.1	55.9
1915	102	102	44.3	55.7
1916	115	114	49.7	50.3
1917	137	64	54.9	45.1
1918	152	36	54.3	45.7
1919	176	95	54.8	45.2
1920	235	76	54.0	46.0
1921	189	113	41.9	58.1
1922	183	178	44.1	55.9
1923	204	194	44.3	55.7
1924	207	198	40.5	59.5
1925	212	224	39.8	60.2

The survey as reviewed by the Bulletin of the National Lumber Manufacturers Association finds in each of the years 1923, 1924 and 1925, an excess of building over normal requirements, as shown by the population lines. At the end of 1924 the shortage during the war period had been more than made up. The year 1925 reveals a surplus of building over the normal needs of the year; in fact, the country as a whole, as indicated by the 130 cities at the end of 1925, was 11.2 per cent over-built as compared with the year 1914.

Concrete Building Units

While concrete units have long been used in building construction it is only within the past few years that the manufacture of concrete brick, block, and tile has attained a rapid growth. This growth has been brought about largely by the heavy demand for building materials and the efforts of interested associations in bringing to the attention of the public the desirable features of concrete units.

Numerous inquiries are received at the Bureau of Standards, Department of Commerce, Washington, D. C., from people who are interested in learning more of the properties of concrete units and the details of the manufacturing methods. In order to answer these questions in a reasonably complete manner, a circular has been prepared covering the essential features of concrete brick, block, and building tile, and giving some general information about their manufacture.

The more important properties of concrete units are discussed and some of the advantages of their use in masonry building construction are set forth. Concrete block, tile, and brick have been defined and the recommendations for the standardization of sizes of the several types of units to avoid waste are given. The recommended standard sizes adopted are given as well as the large number of sizes in present use. This comparison shows that by maintaining definite standards of size for the units a large saving will result in an outlay for machinery, molds, and pallets, as well as the stock to be carried in yards.

Various materials, widely used in the manufacture of concrete products, are described in detail. The questions of proper size and quality of both coarse and fine aggregates are discussed and the use of admixtures, facing materials, and coloring processes are outlined. The need of careful proportioning, the proper time of mixing, the methods of molding, and the several means of curing are discussed at some length. The requirements for concrete units are dealt with from the structural, architectural, and fire-resistant viewpoints. The methods for conducting tests of concrete products and the proper interpretation of data from test reports are outlined.

Those desiring copies of this paper should write to the Superintendent of Documents, Government Printing Office, Washington, D. C., for Circular No. 304 of the Bureau of Standards.

Six Billion a Year

Six billion dollars is a reasonable estimate of what the nation is spending for construction each year, according to John M. Gries, Chief of the Division of Building and Housing, in a survey published in the U. S. Department of Commerce Yearbook.

In spite of the magnitude of this program, according to Dr. Gries, it is only recently that the building of houses and construction of buildings, roads, canals, bridges, railroads, harbor works, subways, tunnels, water-supply systems, and other work that produces a more or less fixed structure or alteration of the natural topography, have been clearly recognized as a single industry.

The importance of the construction industry is hard to over-emphasize. In value of product it ranks considerably above the automobile industry, the largest manufacturing industry, and about on a par with railway operating receipts. Variations in construction activity from year to year have a large share in determining the prosperity of other major industries such as railways and lumber mills. Construction affects scores of manufacturing industries, and bears some relation to retail trade and to the in-

dividual incomes of practically every family in the country.

Existing construction underlies the whole economic organization of the country. The production of its manufacturing industries is carried on mainly in buildings, of course, but depends even more on the physical network of railways, highways, telephone and telegraph systems, and lines for the transmission of power and water, all of which are in large measure the products of construction. Living standards of the people depend very largely on the character of dwellings, on the availability of water, sewerage, gas, and electricity, and the accessibility of varied recreational facilities, and on the streets and roads which enable them to get from place to place. There is a measurable relation between the character of dwellings and health. The schools require a great number of buildings in order to do their work effectively.

The volume and character of new construction is of great importance. The million and a half to two million increase in population each year requires new dwellings, increased manufacturing facilities, and increased public utilities and other types of construction. Structures worn out or destroyed must be replaced. If living standards are to improve and people are to occupy better houses, continued large construction programs are needed. Some types of construction add to the productivity of industry. In general, progress depends largely on the Nation's devoting a due proportion of its energies to construction.

COMPETITIONS

SHEET STEEL GARAGES

A competition in artistic designs for sheet steel garages is being conducted by the Sheet Steel Trade Extension Committee, Oliver building, Pittsburgh, Pa. The prizes are $500 for first mention; $200 for second; $100 for third and eleven prizes of $25 each. Entry blanks may be obtained by addressing Edward B. Lee, A. I. A., professional advisor, 1210 Chamber of Commerce building, Pittsburgh, Pa. Designs must be submitted on or before Tuesday, October 20.

Wood vs. Steel Houses

IS the steel-frame dwelling an important contribution to the building art? The case for it was recently stated and widely published through the medium of an article by John Carroll Broderick, consulting architect of the demonstration house erected at Tarrytown, New York. Now comes a report on this same house, frankly from the standpoint of a lumber construction engineer. F. P. Cartwright, consulting engineer of the National Lumber Manufacturers' Association, has made a technical report of his impressions after carefully examining the Tarrytown house in order to acquaint the lumber industry with the degree of competition, if any, it may expect to encounter from fabricated steel in the field of dwelling house construction.

The report concludes that, contrary to assertions, the cost of the Tarrytown house, (probably about $25,000 for a seven-room house) is excessive as compared with wood. It finds no substantial advantages to offset increased cost, plus some disadvantages. Little, if anything, it says, is gained in space economy, as the standard steel-frame units used are 3¼ inches thick in the wall, whereas standard wood studs are 3⅝. These units do not permit of accommocating plumbing pipes within the walls, and special enclosure for them must be hand-built of metal lath and structural shapes.

As to reputed fire-resistance, Mr. Cartwright thinks it is largely illusory. "There is a tendency," he says, "to assume that the use of incombustible materials at some point or another about a building necessarily increases its fire-safety. This mistake has been fostered by the promoters of incombustible building materials, until a correct statement of the essential facts has become necessary both to protect the public interest and those of competing materials adversely affected. The use of a steel-frame for a dwelling, unless of typical fire-resistive construction, employing two-hour protection throughout for steel members and the usual complete cut-off between floors, affords very little increase in fire-safety, and in fact will result in much quicker collapse than would occur with a wood-frame structure on which a small fraction of the additional cost had been spent for fire protection. From this view point the steel-frame does not reward the increased cost it occasions."

The steel frame of the Tarrytown type has much less rigidity than a lumber frame, it appears. The thin brick walls, interstices at masonry joints and condensation on interior surfaces are very apt to induce rust of the steel frames, it is urged. The lack of flexibility of the standard units, on which the theory of steel construction is founded, seriously interferes with economical construction, when it comes to adapting these units to unforeseen floor plan requirements. "It is apparent that the free location and connection of partitions to floor systems is an unsolved problem." Future alterations, even such minor ones as additional doors or windows, will be difficult and expensive. The walls of the house—so largely of heat conducting metal—do not promise much economy of fuel, but the roof of two-inch plank with insulation underneath should contribute greatly to that end.

The Engineer and the Red Ink Balance

By BESS O'MELVENY

SINCE the feminine sex has stormed the business world, the temptation of "stirring the pudding" has been irresistible. The engineering profession has withstood the onslaught for a greater length of time, I believe, than the other professions, but femininity has entered within the sacred portals and will remain, a valuable addition.

Knowing this fact, I will venture to voice an opinion arrived at some years ago—namely, that most engineers are as interested in the cost sheet as in a recipe for apple pie. If the pie is edible or the bank account is not in the red at the end of the year, all is fair enough, but they are rarely minutely interested in the ingredients or the method used to secure the finished product. When they are wrestling with a troublesome curve on a rising grade, they are oblivious to such commodities as time and money. Such a lack in professional training could be remedied if a short course in practical business accounting were included in the regular curriculum of all university engineering courses.

It is only at the end of the month when the chainman, rod man, transit man, draughtsman, not to speak of the supply man, towel man, rent man and numerous others hove into view, that the lines in the engineer's face deepen; and he becomes lean and anxious as the general scramble for the elusive dollar begins.

Statements are oftentimes rendered in a most apologetic manner, after the final figure has been arrived at by supposition—" that's all we can charge for the job," or by comparison—"we charged him so much last time, we'd better make it the same."

The first step in the cost sheet is the placing of a definite value upon the time of the engineer himself. The salaries of the monthly employees should be pro rated at a day rate, making the rate high enough to include the Saturday half holidays rather than a six day week.

A system of time cards must be rigidly enforced. The time spent upon each particular piece of work by the field parties and each individual, including the engineer himself, should be notated. A brief note showing which phase of the work is being done each day is a decided help in making out statements and comparing the cost of different parts of the work. The mileage of automobiles or other means of transportation to and from the job and any incidental expenses paid by the chief of party should be entered upon the daily time cards and charged against each account.

The blue printing bill is seldom considered an item except when it has to be paid. Have you ever gone into a store where you were not charged for some trifling item costing only thirty-eight cents? True enough, it is not always politic to charge for a few prints, but as a general rule the expenditure should find its way to the cost sheet.

It will take long and earnest delving into the bookkeeping system, which fortunately nowadays nearly all engineers have, to discover the figure of overhead.

A monthly figure including the rent, water, telephone, office and field supplies, towel service, insurance are easily arrived at by averaging accounts for several years back. Depreciation, repairs, lost accounts, new equipment, time consumed in general office work and meeting clients, unavoidable waste time are items that are variable and need careful consideration. When the overhead is finally reduced to a daily figure it can easily be apportioned according to the number of employees. If it does not vary with the daily wage but remains a set figure for each man, there is considerable time saving in computation of accounts.

When exact time consumed upon a particular piece of work, the charges for mileage, blue prints, incidental expenses and overhead have been determined, the true cost is easily arrived at, and the engineer will know the charge that should be made to keep him out of the precincts of the poorhouse.

A certain percentage of total time and overhead as profit, is a fair way of arriving at the final charge both for the engineer and his client.

As a final warning, never bill work on a day basis, but itemized surely, as a lawyer does his statements. The charge should be made in a lump sum — the engineer is a professional man, not a day laborer.

New Publications

The Atlas Portland Cement Company, 25 Broadway, New York City, has recently put out the following publications of interest to architects, engineers and contractors:

Swimming Pools
Ornamental Cast Work
Mortar
Remodeling With Stucco
Terrazzo
Houses of Stucco.

Any of these publications may be had on application.

No Increase for Fresno Labor

In an effort to revive construction on the $1,800,000 school building program in Fresno the building trades council has notified the board of education that the building crafts will not seek an increase in wages.

Trade and Industrial Notes

"Overcoats" for Weather-Torn Buildings

By C. C. MERCER

THE costly necessity for protecting, repairing, and re-protecting frame houses has been an economic burden upon the home owner ever since lumber supplanted logs as a siding material. This has been due primarily to the now-proven fact that over a period of twenty years the cost of protection and maintenance amount to a sum greater than the original cost of the structure.

To relieve the home owner of this burden, or to lessen it, was a problem that remained unsolved even after the advent of brick and stone as building materials. Brick and stone are comparatively expensive—just how expensive is shown by the fact that 18,000,000 of the 24,000,000 houses now standing in America are wood frame.

It is amazing when you think that three-quarters of all the houses now in use are frame. It is more amazing when you think of the millions of dollars these home owners have been forced to put into these houses to protect and repair them—with, up until now, no signs of any economic relief during a steady depreciation of property values.

But these frame houses are a ready-made market for "overcoating,"a market that has taken ninety years to build, and a market that is eagerly waiting for just such a relief.

And it is a natural market, too. What if some giant force were to stop the tracks of the progress of America? Then, what would 8,000 architects do? Where would 22,000 building supply dealers and 75,000 contractors search for jobs, for work? Would they cast aside their experience and investment? They would not! They would simply go back and do the things left undone. They would seek to develop a market, find an outlet for their abilities, re-make the houses that had already been built—they would turn to a market that is now ready, ready with more opportunity and profit than any new market could ever present. They would turn to "overcoating"!

And in "overcoating" they would find, as their basis of selling, answers to the problems that have ever challenged the very existence of the frame house. Fire hazard for one. For another, the monetary loss imposed by nature's elements. Then follows the stupendous loss of valuables and the sickening list of casualties and deaths which are due, in a very tangible way, to the burning of frame houses. And finally, the increased value of these 18,000,000 frame houses—every one a single unit of sale—were each one overcoated. In this instance, if the value of each of these houses average $5,000 it is unquestionable that overcoating would double that amount. It would create a new valuation of $90,000,000,000 a valuation that will not decrease, but one that actually will increase instead.

These are facts.

But what is this "overcoating"? It is simply covering a building with beautiful, permanent, weather-proof, fire-safe, inexpensive exterior walls of man-made stone—reinforced stucco!

"Overcoating" requires no special preparation. The man-made stone-stucco wall is applied directly to siding, clapboards, shingles and even over brick and stone surfaces. It is not for houses alone, but for garages, apartments, duplexes, churches, halls, hotels, and all other aged and weather-worn buildings. Overcoats can be used over fences to resemble the patio effects which have become so popular in California and Florida.

Paraffine Absorbs Schumacher

Announcement has been made that the Paraffine Companies, Inc., has acquired an interest in the Schumacher Wall Board Corporation and will be responsible for the management of that concern.

Hunter, Dulin & Co., represented all parties in the deal which involved approximately $1,800,000, according to reports. Under the new regime, A. R. Moylan, who has been associated with the Paraffine Companies for eleven years, will be executive vice-president and general manager of the wall board corporation. The Board of Directors will be made up of several of the Paraffine Companies' principal officers and men of prominence in other lines of business.

The Paraffine Companies, Inc., an $18,000,000 corporation, own and operate seventeen plants in various cities along the Pacific Coast. Head offices of the corporation, which, manufactures roofing, paints, building papers, floor covering and allied products, are in San Francisco.

Combatting Dry Rot in Hawaii

Rapid deterioration from dry rot and increasing destruction of anything built of wood by vast armies of boring ants, is completely changing the construction situation in the Hawaiian Islands, according to Edward A. Mulford, representative of the Los Angeles Paper Manufacturing Company, recently returned from Honolulu.

Mr. Mulford said humid heat is responsible for dry rot setting in on any kind of a wooden structure, and is quite common in tropical countries; but the destruction resulting from boring ants has become so acute during the past year that engineers have practically discarded the use of lumber and wood shingles, and are using stucco for residences, concrete for commercial buildings and asphalt roofing and shingles and asphalt felt for roof coverings.

"Maintenance of the great plantations of Hawaii has involved tremendous expense on account of the dry rot and the boring ants," Mulford told N. L. Brinker, director of sales for the Los Angeles company which makes a feature of El Rey asphalt roofing products.

"Construction has changed on the plantations also," said Mulford. "They use corrugated iron roofings to some extent; but these soon rust out on account of the heavy humidity. Having been in the roofing business for years, I have made an exhaustive study of just such conditions and evolved a sand and asphalt sheeting treatment for these corrugated roofs that is proving very satisfactory.

"Hawaiians are quick to adopt any innovation of this kind that solves their problems and so El Rey products are rapidly increasing in popularity and demand throughout the Islands," he concluded.

NEW TRADE PUBLICATIONS

BONDED FLOOR PRODUCTS

The Bonded Floors Company, Inc., has recently published two pamphlets that should prove useful to architects and builders. One of the books describes Gold Seat Treadlite Tile and the other Gold Seal Marble-ized Tile. Both are Bonded Floor products, designed and made for the modernized floor. Marble-ized tile combines the beauty of vari-colored marble shadings and veinings with the quiet, comfort and durability of cork composition—comfortable and luxurious looking. The book shows the colors that are used in the manufacture of marble-ized tile. The pamphlet on Treadlite tile tells of the individuality of this "made-to-order" material. It is manufactured in twelve beautiful standard colors and is available in several different standard sizes of tile. Bonded Floors Company has offices in all large cities, including San Francisco.

FIVE NEW PUBLICATIONS

Five new publications dealing with the various types of Fenestra steel sash and its installation are offered by the Detroit Steel Products Company to architects, engineers, and building contractors. Of these books, the 1926-27 edition of the Fenestra "Blue Book" is the largest and most important; treating, as it does, every phase of steel window usage. The catalogue contains 128 pages, and is profusely illustrated and durably bound.

"Architectural Windows," a compendium of reversible ventilator type windows for schools, banks, office buildings, and other structures of similar architecture, is a 28-page brochure with the cover in colors. In "Residential Windows" is found complete information on the steel casements, which have gained such a vogue among home buyers and builders. The entire range of stock types and sizes is shown, together with a full description of their various fixtures. The book also covers the installation and screening of these windows. A 76-page catalogue entitled, "Continuous Sash," covers every phase of industrial steel sash layout and erection. Particularly are Fenestra continuous sash and continuous sash operating devices featured.

"Built-In-Daylight" is a complete handbook of sidewall sash for the builder. The application of this sash to various types of building construction is thoroughly covered, and drafting room details for proper erection are given.

TWO COMPLETE MANUALS

A Manual of Concrete Hardeners containing detailed architectural specifications for all approved types of hardeners, both integral and surface treatments, and both colored and uncolored, has been compiled by the Master Builders Company and published for architects, engineers, builders and building owners. The book is loose-leaf in form, of file size 8½x11 inches, with pages indexed enabling the reader to turn directly to the specification without having to thumb through pages of data and descriptive matter. This is a complete manual of concrete hardener specifications with illustrated descriptive matter arranged systematically and including specifications so worded that they can be incorporated in a general paragraph or in detail into building specifications.

A second book of the same size covering Master Builders Concrete Waterproofings has the same unique and convenient arrangement of contents. Both books are supplied free upon request by the Master Builders Company, Cleveland, Ohio.

FIRE TEST PAMPHLET

This brochure has just come from the press of the Massillon Steel Joist Company of Canton, Ohio. The Pittsburgh Testing Laboratory conducted this test on a standard Massillon bar joist floor panel. They advise that it is the most complete fire test that they have ever conducted.

In making this test the standard floor panel was built over an oil-fired furnace, thermo-couples were imbedded at 14 points in the air space surrounding the joists and directly under the panel. The furnace temperature was rapidly raised to 1800 degrees F. and this temperature held to the completion of the test—4 hours and 28 minutes. The slab was fully loaded to its designed rating, 125 lbs. per sq. ft. Deflection and temperature readings were taken at 10 minute intervals throughout the test.

This pamphlet will not be broadcasted by general distribution. Relatively few have been printed and will be sent only to those who request them.

THE RIGHT ANGLE

General Fireproofing Building Products' house organ for July is called the Pacific Coast number. Shows pictures of buildings on the Pacific Coast that are equipped with G. F. products, including the Telephone company's new office building, school buildings at Tacoma, Washington, San Diego, Los Angeles and Glendale; Mutual Building & Loan building, Santa Barbara; Federal Reserve Bank, San Francisco; Grauman's Metropolitan theatre, Los Angeles; Olympic hotel, Seattle; Eagles Temple; Central Bank office building, Oakland; Fabiola hospital, Oakland; State Automobile Association building, San Francisco; Standard Oil building, San Francisco; Winthrop hotel, Tacoma; Richfield Oil building, Oakland and the Balfour-Guthrie building, San Francisco. The issue also contains several interesting articles including one on "Steel Joist Construction," by V. S. Persons of San Francisco.

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The
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OCTOBER 1926

"One of the World's Most Fashionable Playgrounds

The "new"

Del Monte

Lewis P. Hobart / Architects
Clarence A. Tantau \
Lindgren & Swinerton, Inc., Builde

Illustration shows
Main Dining Room

The New Hotel Del Monte and the Monterey Peninsula Golf and Country Club. Painted and Decorated by the Premier Master Painters of the West.

Two paramount issues faced the builders of the New Del Monte—A *painting organization*, with available expert decorators must be chosen who could be depended upon to economically execute the work in 20th century speed and at the same time do the work in a quality-harmony manner.

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the ARCHITECT & ENGINEER

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The
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VOL. LXXXVII OCTOBER, 1926 Number 1

Monterey Enchantment

By

William Otis Raiguel

When our lands and seas were being carved out of chaos, the glaciers laid down on the Peninsula of Monterey the seeds of the cypress, pine and wild flowers — and mingled with them the seeds of enchantment. First came the Indians, finding here a bounteous nature to fill easily their simple wants. Then the Padres and Conquistadores, to rule and build and worship. Next the Yankee traders, the forerunners of our own America. Later the gold-rich San Franciscans and the sun-driven people from the valleys.

Each in his turn fell under the spell, until the booster drew the fairy "Circle of Enchantment," within which lies the great Del Monte forest, 20,000 acres of wooded hills and rocky coast, owned by the Del Monte Properties Company. At last the time came when this company said: "Here is the place and now is the time for a Country Club unique in its conception and membership. Let's do it, and do it better than has been done before."

A year and a half ago they set aside some sixteen hundred acres between Point Joe and Bird Rock on the coast and running back into the forest. They took all the land between the water and the timber line, and on this and in the broad swales running up into the hills built two eighteen-hole golf courses. They built roads as they should be built, winding easily around the slopes and through the forest, to fit naturally into the topography. On a central knoll they built a club house, and at Moss Beach a bathing pavilion. The remainder of the land they divided into two thousand parcels, ranging in size from a quarter of an acre to an acre or more.

Photography by Julian B. Graham, Del Monte.

More than half of these lots front either on the coast, a fairway, or a park. Not only are their owners assured of such wide outlooks as that from the Pierce living room, but one of the most charming parts of the 17-Mile Drive is preserved for all time in its natural beauty.

The company believed so thoroughly in the idea that they did not ask the prospective member to take any chance. They dealt in deeds, not promises. They built and will maintain roads. They built the Club House with all its adjuncts, and the golf courses. They brought water and electricity to the whole area. They guaranteed the club against loss until it had a membership of 1200—a number sufficient to give it ample dues with which to operate a plant where all the construction work had been done, and on which there will be neither indebtedness nor fear of assessments for the club or for public utilities.

OLD SWIMMIN' HOLE, MONTEREY PENINSULA COUNTRY CLUB
Designed by E. S. Stafford

To make it truly a club, the company agreed not to sell until the prospective buyer had first been elected to membership in the club itself.

With all the careful planning of the tract, the work would have been only half done without some supervision of the architecture of the individual residence; so the company inserted in each deed a clause requiring the approval of all plans and stating that in order to promote the harmonious development the style of architecture shall be similar to that found in early California, Spain, Italy, Southern France or Mexico.

There is no wish to prescribe the size or cost of a house a member may build; but there is an earnest desire to bring into being a community which will fit harmoniously into the landscape, maintain the traditions of the early days and present to the world a unity of aspect

in a style or mode free from the cut and dried sameness of most of such efforts.

The type of house which began as Spanish, broadened into Mediterranean, and is rapidly becoming Californian, lends itself beautifully to the full expression of the individuality of most of us who live here. It settles down comfortably into our landscape and climate, and we seem to fit just as naturally into it, without any affectation or any feeling that it must be justified by the assertion of our rights or likes. It has become a part of our life and our time.

The club *is* a country club, and its members *do* golf and ride and swim, but it is more than anything else a living community clustered around the dominating Club House for fellowship and happiness, as in feudal times when the people snuggled under the shadow of the castle

OLD SWIMMIN' HOLE, MONTEREY PENINSULA COUNTRY CLUB
Designed by E. S. Stafford

for the protection of their tribes.

As the keynote Mr. Tantau designed the "Model House" to be used as a field headquarters by the company. He also designed the club house, caddie house and bathing pavilion. Each of these is thoroughly in character—simple, straight-forward and picturesque. It is no mean task to set a standard of beauty for a community, and he and they have done it admirably without being in the least pedantic.

The club house with its graceful tower, its great expanse of sparkling rose colored roof, and its vivid green patio enclosed by shadowed porches, has a charm that the camera does not fully catch. It expresses completely the home of a club. It is both picturesque and practical, with a sense of thorough seclusion from the motoring public, out of sight and sound, on the main thoroughfare. The lounge and

dining room are admirably placed away from the activities of the locker rooms yet easy of access, the great windows look down on vistas of fairways distant enough not to cramp the style or vocabulary of the players, and yet near enough to follow the play.

The caddie house is an amusing importation of a wayside inn from Seville, as much at home in the pines as on the dusty Spanish roadside.

The residential architecture is perhaps most interesting as a group, but some of the houses do command considerable attention because of the part played by their owners in the design and building of them.

Mrs. Graham was one of the pioneers. She set about the planning of a place to live with the pent up enthusiasm of years and evolved a pasteboard model to scale, made even to the painting with her own

THIRD TEE DUNES COURSE, MONTEREY PENINSULA COUNTRY CLUB

hands. She found a man to build from this, while she sat on stumps and rocks and bossed the job. She climbed the ladders and stenciled the beams in the living room. She found and bought and built in a pair of exquisitely carved old Spanish doors. She built a rock fountain in the patio, to share with the birds and deer and elk. Then she sat in her sunlit patio among the flowers, and like Alexander sighed for more worlds to conquer—now she is building a second.

Mrs. Mendel's house is another. She did go to an architect and to one who caught the spirit of her dream, but she also sat on stumps and bossed the job. More than that, she went and got what she wanted when they told her it was not to be had. The roof was to be shakes, and they began putting on the flimsy, pasteboard-thin atrocities which

in this day and age answer to the name. Mrs. Mendel combed the country, and thirty miles down the coast found a man who would split for her what she saw as the roof for her house—great slabs of redwood. The Spanish nail heads, Italian wrought iron gates, the ultra-modern electric range built in chalk rock, and the adobe for the patio wall, tramped out and dried and built under her eye, are all part of the picture, of a crystallized personality.

The Adams house, the Mayo house, and a number of others were the same story in varying degrees, and much of the joy of the club members is going to be in the building of the homes and the living in and with them after they are built. There is a freedom from restraint and an expression of self not found in thickly built towns, and yet there

FOUNTAIN IN PATIO, HOUSE OF MRS. MABEL GRAHAM
Designed by Mrs. Graham

has been no tendency toward the bizarre or the false. Perhaps here in the forest we find the same inspiration from nature which led the Padres and the early settlers both here and on the Atlantic Coast to do such simple and dignified things. It may well be that here we will see a real California type take form and substance, and an architecture of foreign ancestry come from the melting pot truly American.

No story of the Monterey Peninsula is complete without the Hotel Del Monte. Three generations have known it and loved it as a place of rest, recreation and social rendezvous.

After the fire of 1924, when Messrs. Hobart and Tantau took up the problem of designing a new main building to take the place of the old, they were faced by at least two major difficulties—the connection

of the undestroyed wings and the preservation of the old atmosphere of Del Monte.

The first could be solved in plan only by the adoption of the best compromise, and it would seem that they did find the best, and a very good best it is, but it must have been the result of long and serious study. The tying-up on the exterior of two old frame Victorian wings with a modern fireproof California Spanish building looks astonishingly simple now that it is done, but there must have been many misgivings while it was still a matter of drawings only. The walls were plastered over the old rustic and the steep roofs covered with tile to match the new roofs in color—add a little paint and the feat is accomplished. The layman is unconscious of where the old ceases and the new begins. Then, too, the plaster and tile added a considerable protection from

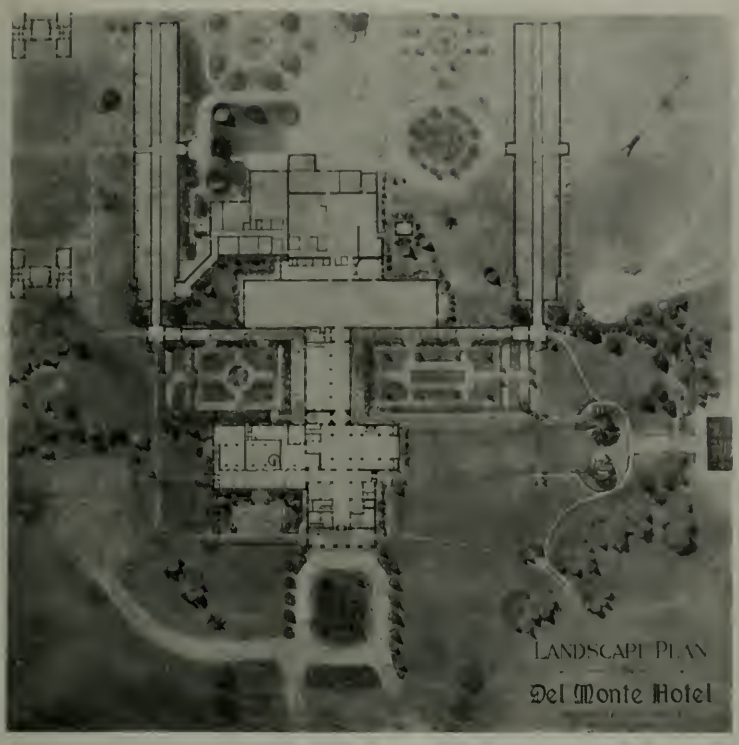
KITCHEN, HOUSE OF J. M. MENDEL, MONTEREY
Frederick H. Reimers, Architect

exterior fire menace, and a complete sprinkler system did as much for the interior.

The second problem of "atmosphere" was most happily solved by the omission of that dressed up ostentation of the modern big hotel. There is no formal ball room, no effect of strutting. Architecturally it is a club rather than a hotel, and that is exactly the feeling that the guests and the hotel people themselves unconsciously absorb. The decorations and furnishings, the murals, the fixtures and the decorative tile in the dining room, the tile floors with the Spanish rugs, the plants and flowers and the pottery all have the domestic character of a club. The architects have loved the hotel and the peninsula all their lives, and when it came to contributing of their art found themselves completely under the spell of its ancient enchantment.

VISTA THROUGH LOUNGE, HOTEL DEL MONTE
L. P. HOBART AND C. A. TANTAU, ARCHITECTS

PLOT PLAN, HOTEL DEL MONTE, DEL MONTE, CALIFORNIA
L. P. HOBART AND C. A. TANTAU, ASSOCIATED ARCHITECTS



LANDSCAPE PLAN, HOTEL DEL MONTE, DEL MONTE, CALIFORNIA
L. P. HOBART AND C. A. TANTAU, ASSOCIATED ARCHITECTS

HOTEL DEL MONTE, DEL MONTE, CALIFORNIA
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LOUNGE, HOTEL DEL MONTE, DEL MONTE, CALIFORNIA
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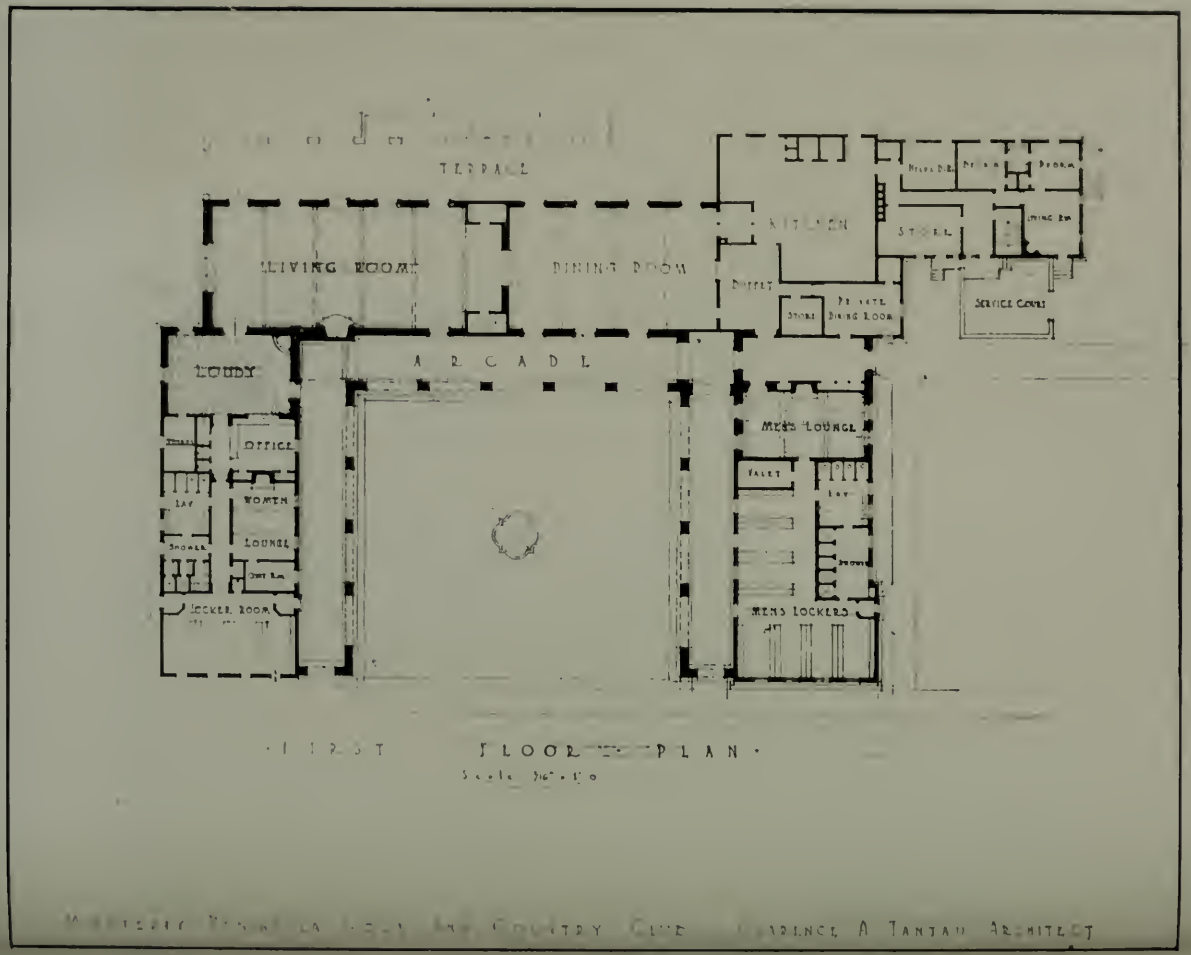
CADDIE HOUSE, MONTEREY PENINSULA COUNTRY CLUB
CLARENCE A. TANTAU, ARCHITECT

BATHING PAVILION, MOSS BEACH, MONTEREY PENINSULA COUNTRY CLUB
CLARENCE A. TANTAU, ARCHITECT

ENGINEER'S PRELIMINARY MAP OF MONTEREY PENINSULA COUNTRY CLUB, PEBBLE BEACH, CALIFORNIA



PLAN, MONTEREY PENINSULA
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VIEW THROUGH LIVING ROOM WINDOW, HOUSE OF LEWIS PIERCE
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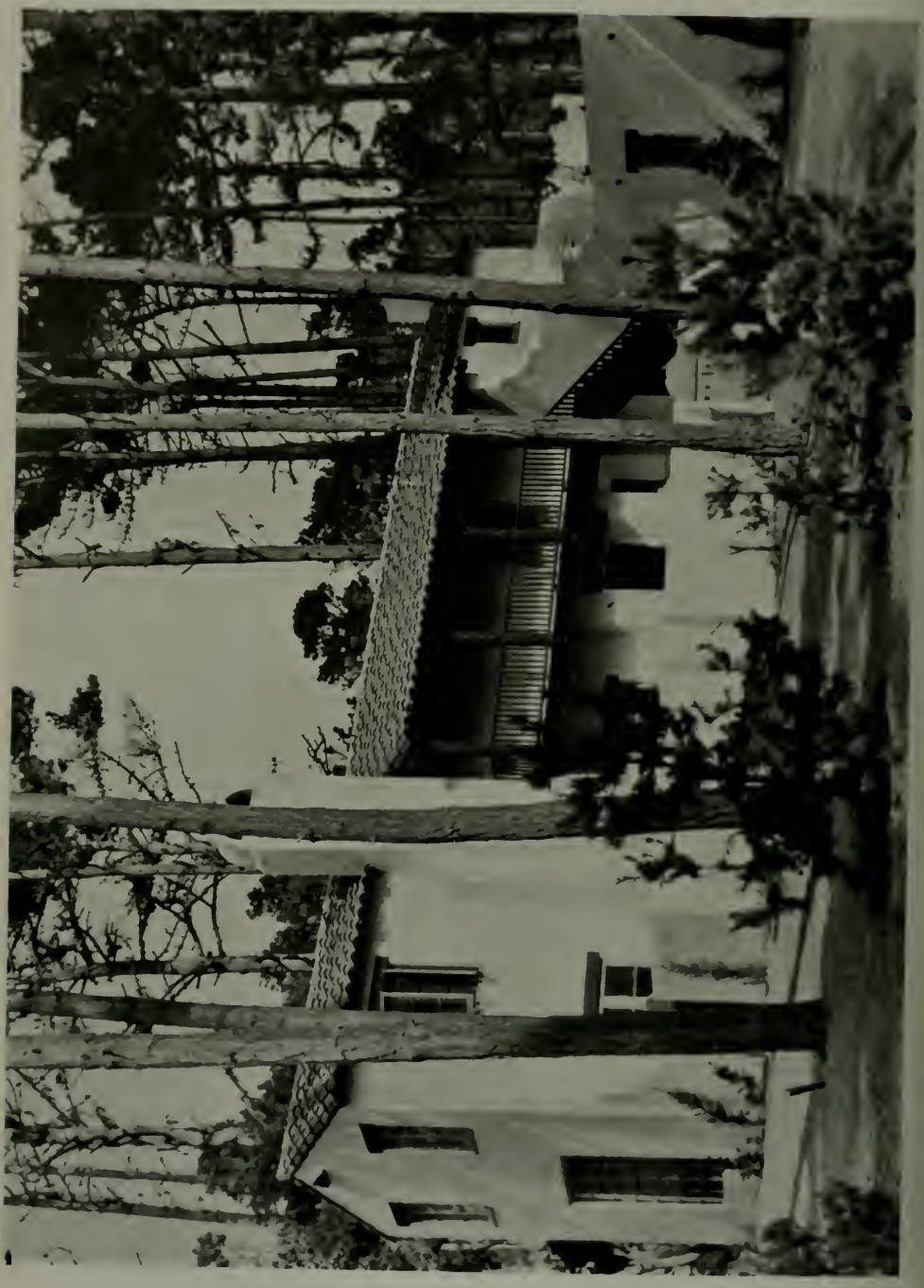

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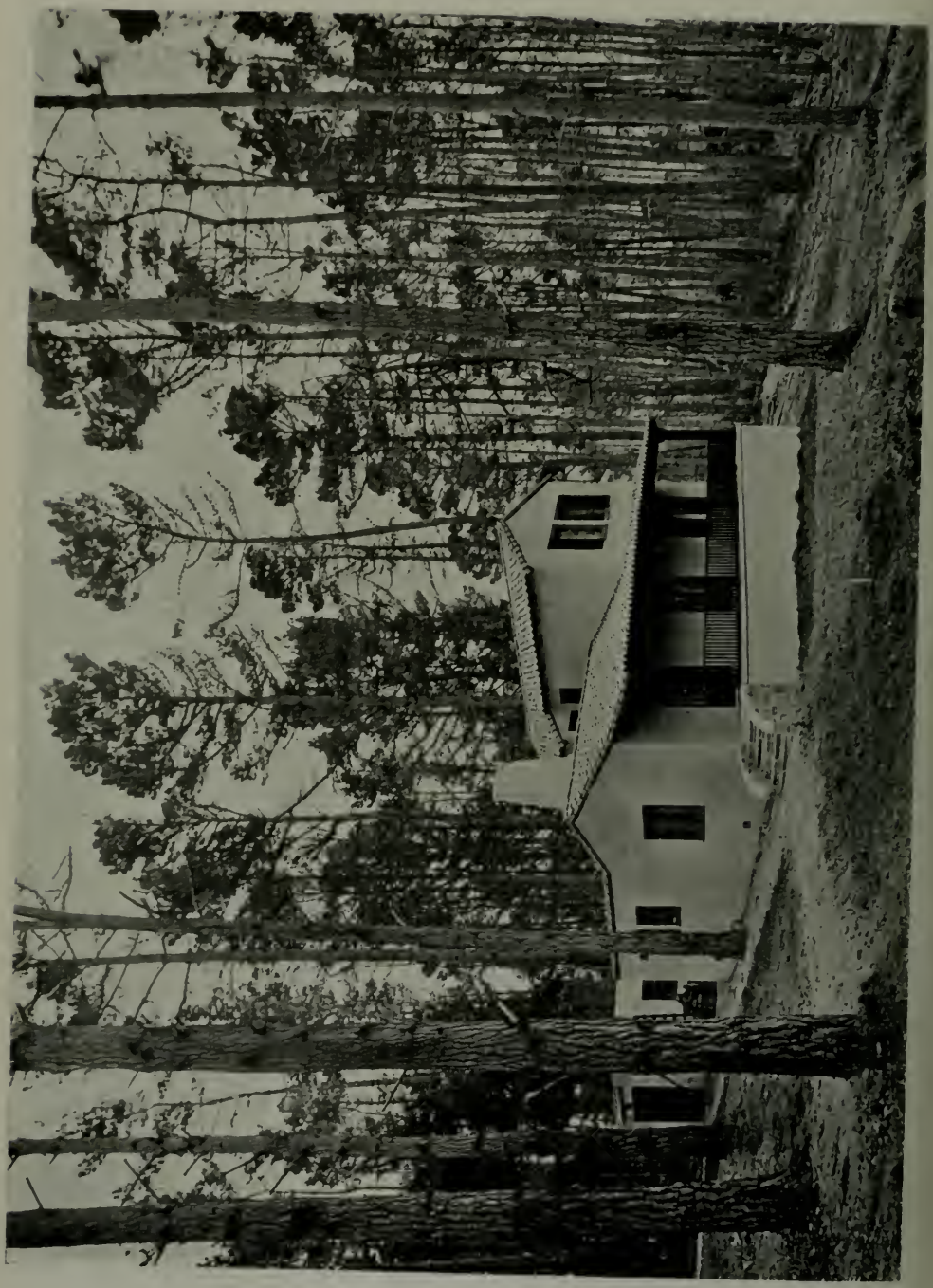

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SPANISH DOORS IN HOUSE AT PEBBLE BEACH
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California Type of Architecture

It has been developed from a mixture of Spanish, Italian, Mediterranean and Mexican

By E. L. BRUNER, Architect

"SHOW me some of your very latest designs, if you please; I'm not interested in last year's models. I want something new. What style of houses are they building this year?"

It has come to just that. At least it has come to that in Southern California. And the same applies to a greater or lesser extent to schools and churches, hotels and apartment houses, stores and office buildings, garages, theatres, jails and city halls.

Style, which, of course, has been a factor in architecture always, has speeded up beyond all dictates of common sense or reason in Southern California, and only very recently has there been heard a chorus of championing voices to the effect that here at last was a fitting and typical California style which was destined to endure.

Economists and educators and others of varying degrees of authority and importance have wailed to high heaven over the rapid and violent style changes in feminine furbelows, but what are they in comparison? Material accessories of civilized womanhood representing a money value scarcely more than one ten-thousandth of that involved in any type of building, and a possible permanence not even worth comparing, yet no proportionate plea for a slowing up of style changes in architecture has yet been heard.

Perhaps this is because we have become accustomed to think of styles in architecture as they have been in the past, as representing a growth so gradual that a lapse of time and the perspective thus created was necessary to distinguish any definite change. Even in America where architecture has been inevitably the "heir of all the ages"—and of all old-world races—style influences for the most part have run a reasonable course. But in Southern California where a more rapid growth of population than in any given area—or era—has caused an acceleration of many things, and where a sublime and not unjustifiable faith in its continued growth of population has caused a more than corresponding building activity, the style situation has gotten out of hand and needs some up-to-the-minute thoughtful attention.

The transient and casual observer might conclude that Los Angeles, for instance, being made up of a cosmopolitan population, including people from every country of the world and from every corner of the United States, was possessed of a perfectly natural diversity of architecture; that the man from New England had built a New England Colonial house in Southern California; that the man from old England had built himself a half-timbered English cottage; while the native Californian had put up a Spanish hacienda, and, as regards public buildings, he might conclude, with fair enough logic, that the variations in style from classic Greek to modern Mexican were based on whim or preference. But one has only to investigate a little to realize the fallacy of any such conclusion.

To illustrate: a brief history of domestic architecture during the last twenty-five years would read somewhat as follows, with no attempt at accuracy of dates:

With the advent of the bungalow in the early nineteen hundreds—or was it the late nineties?—a low-gabled, wide-eaved, shingled affair

imported from India and simplified in most cases to fit the needs of a servantless household, the jig-sawed cottage went out. In fact overly decorative mill-work went into the discard before the development of the true bungalow, and a transition type held sway for a few years. But when the bungalow vogue came in it ousted all others with completeness and dispatch.

A bungalow in California became synonymous with a castle in Spain to countless families all over the United States. It was an only slightly less grand idea, and a much more possible of attainment ideal. The growth of population was paralleled by the mushroom-like production of thousands of bungalows. Every conceivable variation of the type sprang up within a radius of a few miles, from the millionaire's home of many broad gables, low-ceilinged rooms and wide verandas, to the laborer's four-roomed cottage—perish the word—which, strictly speaking was yet a bungalow, but one reduced to its lowest terms in the matter of size and detail.

Psychologically the time was ripe for a change because of the cheap and excessive duplication of the model, which is and has been the signal for a change of style the world over and from times prehistoric, whether in hats or homes or hair-cuts.

Somewhere around nineteen thirteen, almost over night there came a violent and disrupting influence. Native embryo architects who had gone east to college came back full of new ideas. An enterprising real-estate sub-divider was persuaded to erect a limited number of New England Colonial houses in attractive settings — and the change was effected.

Brides no longer dreamed of broad-eaved bungalows, rustic and vine-covered, but rather of spotless white-columned Colonial cottages set in formal gardens with white-curtained windows and corner china-closets. (The history of modes in furniture and interior decoration is another story with even more rapid changes and more ludicrous results.)

Inside of an astonishingly short time a vast number of Colonial homes were built. In fact during this period practically nothing in the shape of a house was erected which did not show a decided Colonial influence. The value of the once desirable bungalow dropped to an alarming figure, or would have done so had not the land on which it stood risen in corresponding proportion. However, it soon became evident that a tiny square white wooden box could be endowed with all the characteristic features of the Colonial house — high gable, green shutters, white columns and all—and built with amazing cheapness and rapidity.

And it was. The Colonial bungalow — the word bungalow used merely to denote a small house—was duplicated interminably in every new sub-division. It sounded the death-knell of the New England Colonial home in Southern California. There are many of them today, the cheaper ones sadly dilapidated and disreputable, and some of the better ones beautifully preserved and still charming, as the saying goes, but like the belle of former days, passed definitely and irredeemably into the realm of by-gone decades.

In quick succession, then, came the English cottage and the Dutch Colonial, never attaining the extreme popularity of their predecessors, but nevertheless prevailing as up-to-the-minute modes for a few short years and leaving some very attractive examples among the better class of homes.

And then the Spanish Renaissance. No style heretofore developed

in or introduced into Southern California was quite so appropriate to the locality, traditionally, historically and from the standpoint of climatic conditions. No type of dwelling ever fitted so unobtrusively and artistically into the typical Southern California landscape; no type so well exemplified the dominant characteristics of the state. Here was no passing fad, it began to be argued, but a stable thing which could be made manifest in an infinite variety yet with invariable appropriateness.

But again—and one is tempted to say alas!—the effect of cheap and multiple duplication began to make itself felt. Of necessity built of plaster or stucco, and equally of necessity adapted to fit modern labor and construction limitations, the Spanish dwelling—with a "beauty only skin deep" was built in never-ending monotony and cheapness.

However, no violent change has yet appeared. The "Italian" influence which clings to the stucco and straight lines and introduces a bit of color and ornamentation, has served to satisfy the desire for something new, yet also to intensify the type. The more recent adaptation known as "Mediterranean" has vied with a Mexican influence in up-to-the-minute modes of domestic architecture, which has led to a definite feeling among architects that out of this Spanish-Italian-Mediterranean-Mexican mixture there is growing a true California type destined to become known the world over as typical of the state and particularly of the southwest corner of the state.

This, then, is the situation—inaccurate perhaps in detail, but correct in its general outline—different from yet similar to the situation regarding public buildings. Different because of different structural problems and similar because of the same tendencies toward rapid changes of style. A public building no less than a home erected in nineteen ten is as completely out of date as one built in eighteen eighty.

Obviously the bungalow had no correlative type of public building, yet its encroachments were noticeable in apartment houses, hotels and small-town buildings. Likewise the Colonial influence was felt beyond the confines of the private dwelling and when the Spanish Renaissance began to assert itself, coming as it did at a time when all of Southern California was going ahead by leaps and bounds, when buildings in truly astonishing numbers were being erected, when outlying districts were being zoned for business and when eastern capital was being heavily invested in Southern California office buildings, theatres, hotels and apartment houses, many public and semi-public buildings were erected which embodied the most attractive features of the type. Some notable examples appeared in Santa Barbara, along Seventh street near West Lake Park, Los Angeles, on Western avenue in Hollywood and then, as newer and more attractive adaptations of the Mediterranean style came into prominence, it was found to apply with equal effectiveness and distinction to home and skyscraper alike, and such has been the trend of practically all recent architectural design.

Without doubt this influence with its many and beautiful variations is more than a passing fad. And yet already one hears rumors of a "Monumental" style, applicable, of course, only to the larger and detached public buildings.

But to those who love the distinction which Southern California has attained, the temptation is strong to plead for a definite halt in this matter of style changes, for at least an attempt on the part of architects to hold to the type which has proved itself so harmoniously appropriate and adaptable to the needs and conditions of the locality.

PEN-AND-INK SKETCHES BY ROGER BLAINE

ENTRANCE FOREST HILL HOTEL, PACIFIC GROVE
George Rushforth, Architect

The Forest Hill Hotel, Pacific Grove

THE Forest Hill hotel at Pacific Grove, California, is a five-story reinforced concrete building containing 98 bedrooms and bathrooms. It is located on Forest avenue in the center of two blocks of land commanding a magnificent view of Monterey Bay. The building itself has a frontage of 152 feet and a depth of 77 feet, provision being made for a future extension of the wing on the avenue side.

The architect, George Rushforth, in designing the building, followed the present trend towards the simplified Spanish style in hotel architecture, which, with the well balanced proportions attained, has a pleasing effect. A spacious lobby with large open terrace in the front and rear, public and private dining rooms, ladies parlor, and a homelike lounging room with a large fireplace, are features contributing to the success of the hotel. All the public rooms are finished and paneled

Victor H. Poss, Structural Engineer

FOREST HILL HOTEL, PACIFIC GROVE
GEORGE RUSHFORTH, ARCHITECT

SUN PORCH, FOREST HILL HOTEL, PACIFIC GROVE
GEORGE RUSHFORTH, ARCHITECT

LOBBY, FOREST HILL HOTEL, PACIFIC GROVE
George Rushforth, Architect

LOUNGE, FOREST HILL HOTEL, PACIFIC GROVE
George Rushforth, Architect

in Philippine mahogany, and the floors are tiled. A well equipped kitchen, locker rooms, store rooms, etc., such as are now demanded in modern hostelries, are provided.

Mr. S. S. Parsons of Hobbs Parsons Co. is the owner and the C. L. Wold Company of San Francisco were the builders. Construction activities covered a period of seven months, the opening taking place July 1, 1926. On account of the summer vacation season beginning at this time the decorating of lobby and dining room was deferred until later. The total cost of the hotel was $220,000.

In connection with the building of the Forest Hill hotel it is interesting to note that contrary to public belief, Mr. Parsons was the sole financier of the project and it was through his enterprise and confidence that the building was carried to successful completion. Several thousand dollars were pledged by the merchants and citizens of Pacific Grove as a foundation for building operations. The site was to have been donated but Mr. Parsons, assuming an attitude of public spiritedness, declined to accept the contribution. He bought and paid for the lot himself, purchased additional ground near the hotel and offered to use the money pledged in building a play ground, club house, tennis courts, etc. These improvements have all been made and when the pledges have been fulfilled the park, buildings and equipment will be turned over to the city of Pacific Grove.

* * * *

Fire Resistance of Hollow Building Tile

For several years the Bureau of Standards, U. S. Department of Commerce, has been conducting tests on hollow tile in co-operation with the Hollow Building Tile Association. These tests are planned to yield more reliable information than is now available on the properties of hollow tile, such as the strength of walls and their ability to withstand the effects of severe fires. The annual progress report which has just been issued, is concerned principally with the fire tests.

For these tests walls 16 feet long and 11 feet high were built, and placed so as to form one wall of a furnace. The fire in the furnace during a test is regulated so that a temperature of 1700°F. is reached after one hour, and 2150°F. at the end of six hours, if the wall does not fail previously.

The tests show the effectiveness of the walls in preventing spread of fire. Some of the lighter 8-inch walls after several hours exposure became hot enough on the unexposed side to set cotton or excelsior on fire, and this was taken as a sign of failure. None of the walls failed by actual collapse. The tests showed the great value of a protective coat of cement or gypsum plaster when walls are subjected to fire. The heavier 8-inch walls and the 12 and 16-inch walls showed very good fire resistance.

The Possibilities of Metal Houses*

By BENNETT CHAPPLE

JOHN HOWARD PAYNE, in a far off alien land, penned his immortal ballad that has been echoing in the hearts of generation after generation — "Home Sweet Home." My subject today has to do with the building of steel homes. We think of steel as a hard and cold substance and not in any way related to such sentiment as might be called up with the thoughts of "Home Sweet Home," and yet, we stand today at the convergence of mighty streams of human effort where the great highway of iron and steel joins that of home builders.

In talking about homes my mind naturally drifts back to the pioneer days of America when the log cabin was the prevailing style of architecture. And how suitable to the times. The logs were plentiful; the big task was to get rid of wood, not to conserve it. One has only to travel through the cut-over lands of northern Wisconsin and Michigan, even in this day, to see what a struggle it has been to clear the land for agriculture. No one could sing that beautiful ode to a tree, by Joyce Kilmer, and expect to get a very hearty response from these people.

Metal has supplemented wood in many directions. It is inevitable that it will supplant it in the building of houses. As has been pointed out, the economic pressure of comparatively higher prices for lumber and lower prices for metal will automatically bring it about.

Architects are ready and willing to develop beautiful, artistic metal home buildings, once the movement is under way. There are some who are ready to accept steel joist and structural for homes, but who cannot see any future in sheets for walls. Let me call attention that the prevailing mode of stucco has popularized flat surfaces — metal lath is already being almost universally used for this work. This means that sheets will surely have their day—how and when I do not know. I am willing to leave that to the architect.

When we stop to think about it metal is already crowding into our homes at a very considerable extent. I might mention beds, dressers, refrigerators, stoves, furnaces, ventilators, clothes chutes, gutters and downspouts, base boards, doors, metal panels, and many other items.

Those who believe in the future of metal homes point out that a modern house burns up every four minutes in this country, and that the fire loss amounts to $500,000,000 each year. It is surely something to combat this great economic waste by building homes of materials that cannot burn. Then, too, it is pointed out that metal homes mean absolute security from the hazard of lightning. Where is a woman who would not welcome the safe refuge from thunder storms, knowing that if the lightning should strike her metal home it would dissipate and discharge itself into the ground with her hardly knowing it. She would no longer have to look at the gathering clouds in terror and pull the window curtains down and cover her head with pillows. She could sit calmly on the porch of her metal home and say "Let it flicker." I am not joking when I say—Don't you suppose many women would insist on metal homes once they realize this boon?

With the advent of metal for home building has come standard, unitype construction that can be made interchangeable in the building

*From an address at the Fourth Annual Meeting of the Sheet Steel Executives, White Sulphur Springs, West Virginia.

of small houses. This means that a large part of the work can be done in the factory and the house building will be largely a matter of assembling. It begins to look like the automobile has taught us something in standard parts and the science of assembling. It is pointed out that such building would require less skilled labor. They will build closets with doors complete to drop in, and bath rooms made to standard size and fitted out complete will be shipped to waiting jobs, packed and crated like automobiles, to be dropped into place and the house built around.

I have talked with many architects. I tell you unqualifiably they are ready to build metal homes. But, they are conservative. The problems they face are not so much the designing of artistic residences of metal, but having designed them, is the material available in the form required, and are builders sufficiently versed to carry out their plans in this new form of construction?

It means a new line-up of mechanics in home building. This is an important phase of the development, and I suggest the best way in, is the actual construction of metal homes which serve as a training school. The decision to build a metal home at some well known place where it can be visited by many people is the one best way in my judgment to forward the interests of this association. I hope it will be done without delay as time is invaluable in movements of this kind. What does this signify? It is anybody's guess. I believe the changes which iron and steel are to bring in the residential construction during the next ten years will be as marked as any changes which iron and steel have brought to any phase of human life. Less than thirty-five years ago, the first structural steel for skyscrapers was rolled by Charles M. Schwab.

It is not necessary for us to argue as to the style or methods of building metal homes — let us be content to recognize that a great moving force is exerting itself in our lives today and it is heading directly into the lap of iron and steel industry, and because of the light construction necessary it is heading straight into the camp of the sheet manufacturers, instead of into the structural plants. What are we doing to meet this situation? Drifting and dreaming are pitiful exhibitions, especially when the opportunity for service looms so large. The time has come to reach out and develop in earnest. What does this movement in the building of iron and metal homes mean to the structural industry? I am quoting Prentice Winchell, one of the editors of Iron Age, who predicts that the movement will increase the consumption of iron and steel, not 10 per cent, not 25 per cent but 50 per cent.

Impossible, you say. Think back. Twenty years ago the sheet production was not very busy taking care of the automobile business. In the past ten years it has grown to take 35 per cent of the entire production of sheets. That the iron and steel homes will outdo the automobile in the demand for sheets is the opinion of every one who has carefully studied the possibilities.

Development of Architectural Styles in California

By REGINALD D. JOHNSON, F. A. I. A., in California Southland

DURING the past forty years in California, or since the days of the so-called "ginger-bread" period, there has taken place a most interesting architectural development and search for architectural styles which are truly Californian.

The range in architectural styles as developed by this movement has been almost unlimited and surely no section of any country can equal in variety the attempts which we have made to solve this problem. We are still daily confronted with various examples of these efforts in design, ranging from the would-be cozy Chinese bungalow with its painted tin tile roof to the Mission garage with its all-important campanile.

While this development has often been painful to watch, it nevertheless has not been without interest, and now that we are apparently passing through the extreme jazz plaster and vari-colored shingle period there are indications on all sides that we are settling down to two more or less distinctive types, and the development of one general style is probably not far distant.

The two types which are at present most in evidence in our domestic architecture we will call, for the want of better names, the Mediterranean and the English. In both these types a very good deal of fine work is being done, work of which we are all justly proud.

No one can question the charm of the better examples of the Mediterranean style as developed by our local architects. No one who has at heart the interest of better architecture in California would wish to see this style replaced or discouraged in any way, and it is only to be hoped that this type will receive more support and will not be cast aside for some new style which may at first appeal somewhat to one's sense of novelty but which may have little else to recommend it to thinking people.

And now a word for the so-called English type, many excellent examples of which we see about us. This type has been developed by those people who believe that from the Anglo-Saxon point of view there has never been but one real architectural interpretation of the word "home," and that interpretation is the English or the Colonial. its Georgian offspring. These same people are well aware of the charm of the Spanish and Italian, and of the appropriateness of these styles to local usage, and the interesting question which we have to solve is "What style or type can be suggested for these people, who recognize the inappropriateness of the English in Southern California but are not willing to forego its charm and livable qualities?" Can these two types be fused together and out of this fusion a new style developed which will satisfy at the same time those seeking the home atmosphere and charm of the English and still retain the romance of the Mediterranean?

Have we not before our eyes examples of early attempts along this very line of thought, attempts to combine the livable quality of the Georgian with the romantic quality of the Spanish? Are not the early California houses the indication of the source to which we should go in seeking the solution of this problem? Those houses of Monterey, for example, built by the early settlers solved the question of a background for their American furniture and at the same time gave an

indication of the possibilities of this type when used for the solution of problems susceptible to picturesque solutions.

If we study and analyze these early and often crude attempts we find that in place of the painted wooden exterior of New England we have the plaster wall, which of course from a practical and artistic point of view is better suited to our semi-tropical climate and vegetation. In place of the shingle roof we find the hand-made tile and the hand-split Redwood shakes, and in place of the severely plain New England silhouette we find the over-hanging balcony and informal outlines typical of Spanish work in the mother country and in her colonies.

If we are to develop a true California style of architecture let us see if we cannot retain the so-called Mediterranean style, which is now being so successfully developed, and for those who seek a somewhat different architectural atmosphere for their homes let us see if there is not in the architecture of early California a solution in another style which shall completely harmonize with the so-called Mediterranean, but withal be distinctive, fitting, practical, and altogether livable.

PENCIL SKETCH BY ROGER BLAINE

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ON ARCHITECTURAL ATROCITIES

A news item says that civic organizations of Chicago have launched campaigns to eliminate from the Smoky City two types of architectural atrocities which hurt the appearance of the second largest city in the land. The first atrocity is that old-fashioned kind which calls for unsightly pent houses and water tanks on the roofs of downtown buildings. The other is the "shirt-front" style of architecture. The "shirt - front" style, let it be known, is that in which only the street elevation is given a finished architectural treatment, the sides and back being tile, timber, concrete or common brick without embellishment, and with no attempt at unification with the front.

The Pacific Engineer suggests, and with good cause, that a similar campaign on the Pacific Coast might not be at all out of line. "Short-sighted owners and those who fail to consult architects," says The Engineer, "are constantly spoiling the appearance of the business section of their town when they might, at very little extra cost, build structures of character and beauty that would be a credit to the community."

INSTITUTE FAVORS EDUCATION

The American Institute of Architects has finally reached the conclusion that it is time to educate the public into a clearer understanding and appreciation of good architecture. The Committee on Public Information has taken hold of the matter in a manner that leaves no doubt in one's mind as to ultimate results. Heretofore important reports by various committees have received little or no publicity despite the fact that much of the information they contained would be of value to the public. Aside from publication in the Institute Journal, which covers a limited field and is rarely seen by the layman, committee reports have been as good as buried. Now the Committee on Education, perhaps the most important of all committees of the Institute, makes the significant and valuable statement that, while the architect may be educated to the very highest point of efficiency, it is the general public that will control the expression of taste. When this committee urges the importance of education of the public to higher standards of excellence, it makes a demonstration in the right direction. No doubt that having so well promoted systems for higher architectural education, the Institute will ultimately point the way toward a similar result on the part of the general public.

These matters take time and may not be accomplished except through sustained effort. But the initiatory effort has now been made and the future is hopeful.

ARCHITECT NEEDED FOR HOMES

One need not travel far in any of our Pacific Coast cities to find evidence of poor design in domestic architecture. The aberrations are mute testimony of failure to employ competent professional advice. Stock plans are in evidence here, there, and one might say without much exaggeration — everywhere. Something must be done to curb this tide of bad design and poor construction. The real estate promoters are largely to blame. They think of a house only in dollars and cents. It is no concern of theirs how a house looks once they have unloaded. The banks, too, are more or less at fault. They should insist upon a well designed building before granting a loan.

Prospective builders must be educated into a keener appreciation of the services of an architect. The real practical service of the architect, the assurance of pleasing design and convenient arrangement of the home, the requirement of specified materials and their proper application, the inspection and guarantee of good construction, the certainty that everything will be done according to contract and plans and specifications, all these things are beyond the ken of the average prospective builder.

Unfortunately, an impression seems to be prevalent among many people that the employment of an architect necessarily means a substantial increase in the cost of the home, as the architect will want to inject a lot of gingerbread trimmings and innovations in arrangement, all of which will be expensive. This is not so. The architect will carry out your ideas in planning the home; he will first of all be careful to suit you. Possibly he may offer suggestions as you outline what you desire, but they will be for the improvement of your general plan. Primarily his idea always is to give you something creditable and in line with what is wanted at the least possible cost.

MECHANICAL ENGINEER IN DEMAND

The advice of the mechanical engineer is being sought more and more by architects who would give their clients the best possible service. At one time only the large jobs were considered of sufficient importance to warrant employment of a mechanical engineer. But with the increased use of electrical appliances it has been found practical to consult the electrical engineer, that the building may be adequately and properly wired for the transmission of electric energy. Commenting upon the desirability of expert advice in the preparation of electrical specifications, the Journal of Electricity says:

It is quite possible that the electrical engineer may be considered only an added burden to a construction project. Many unthinking architects and contractors have been known to hold this attitude.

Will it not be well to consider for a moment, just how important the electrical engineer is to a job?

To begin at a vital point, it is more than likely that the electrical engineer will put enough copper into the job to carry the load demanded of it. Moreover, it is likely, too, that he will put in enough copper to carry sufficient overload so that the demands of natural progress will find capacity to meet at least a large percentage of those demands. This is all in the eventual interest of the client, whether he has sense enough at first to see it or not.

The electrical engineer will save the electrical contractor money because of the definiteness of his specifications and the ease with which the contractor's men can put in the job afterward from well drawn plans.

The owner of the property is the one who benefits more permanently. If the architect, wishing to save on his expenses so that he may make his fee larger, neglects to call upon an electrical engineer for the electrical layout of a large job, he sometimes finds later that he must put on such an engineer to inspect the job while it is being done, to guarantee to him and his client that the

electrical contractor does all that is expected of him. Such a service nearly always costs that architect more than if he had called in the engineer in the first place. The electrical contractor is often forced to lose money on closely figured estimates from indefinite specifications, and worst of all, the owner of the building gets a job which hurts it from an investment standpoint.

It is reported on good authority that certain buildings built under such a plan are the most expensive buildings in a certain large city to maintain and to keep rented. Because the electrical equipment in them is inadequate, tenants are harder to find and rents are consequently lower. On the other hand, buildings on adjacent lots, because of completeness of electrical installation and capacity, are in demand for office quarters at all times.

"Shirt Front" Architecture

Campaigns have been launched in New York by civic beauty organizations and bodies connected with the architectural and structural industries to eliminate two atrocities of modern city building—the "shirt front" style of architecture and the placing of unsightly pent houses and water tanks on roofs.

A "shirt front" building is one of which only the street elevation is given a finished architectural treatment, the sides and back being of common brick, with no attempt at unification with the front.

Architects who design such buildings claim that it is not from inclination but at the behest of the owner or builder who wished to save money. Those opposed to this building style point out that in skyscraper construction the sides and rear of a building are almost as noticeable as the front and therefore the rough finish of these walls detracts from the beauty of the building and also of the surroundings.

The modern trend in high structures among builders with an eye for beauty as well as utility, is to treat the entire building as a unit, of which the four sides have an equal value, rather than as a pile of masonry with only a fine face. In order to achieve this unity and also to give a more pleasing appearance to sheer walls of buildings in which it is not practicable to place windows, shaded brick often is used to create the impression of windows, niches and set design.

The ugly roof structures, which make the skyline of many cities appear as seas of water tanks and packing boxes, have come in for vigorous condemnation, particularly by city beautiful organizations. And here, the clever architect, aided by a builder who believes the beauty achieved is worth the money expended, is coming to the rescue.

In many modern buildings these unsightly structures are so placed as to form an integral part of the building unit, in other words, placed inside and surrounded by a roof. Skyscrapers of the old style largely were packing box affairs, with a flat roof topped with a gigantic cornice and surrounded by small service structures. The upbuilding of roofs over penthouses and water tanks and smoke stacks gradually is eliminating this style of architecture and resulting in structures of pleasing proportions from the base to the top.

New Building Code

The final preliminary draft of a uniform building code for Pacific Coast cities, has been completed and copies are being distributed by Secretary J. E. Mackie of the Pacific Coast Building Officials Conference, Los Angeles. The code will effect a marked reduction in building costs, according to Secretary Mackie. Such reduction will be possible because the better and more uniform quality of building materials which are now being manufactured allows of higher stresses being placed upon them and the new code requires less material to be used in building because of this fact.

"While the code carries with it some radical departures from present building regulations on the Pacific Coast, it is a big step forward in the advancement of practical and workable building regulations," Mr. Mackie said. "The idea has been to make it a modern document and not to adhere to precedent when the precedent has been proven to result in increased building costs which are unnecessary in the light of modern advancement in methods of construction and in manufacture of building materials.

"The code gives more just credit to materials themselves and recommends more rigid direct engineering supervision in erection and construction of all portions of buildings. This will mean a lowering of building costs as well as greater safety during construction and in the building itself."

The most modern practice in effect in this country today has been incorporated in the code in its regulations recommended for fire escapes, stairways and general safety features, according to the secretary.

"Arrangement of the code has received a great deal of attention," according to the secretary. "The three basic parts are requirements based on occupancy, location in fire zones and types of construction. In these three parts it is possible to find all of the general requirements necessary to determine the kind and type of building required for any specific use or location, and by means of direct sectional references included in these three major parts, all detailed matters are easily found in the remainning portions of the code."

With the Architects

Building Reports and Personal Mention

New Society of Architects

With the object of promoting high standards in architectural design and construction, and in professional ethics and conduct, the Society of Alameda County Architects has been organized with John J. Donovan as president, Chester H. Miller, vice-president and Ralph Wastell, secretary-treasurer. The board of directors consists of W. G. Corlett, Walter Ratcliff, Roger Blaine and Carl Warnecke.

Among other plans for insuring architectural distinction to cities east of the bay, exhibitions will be held at which the Honor Award System will be used. Awards will be made for best exhibits in various classes, not only to the architect but to the owner of the building. This system has awakened keen public interest where it has been tried, and unquestionably works for improvement in architectural treatment generally.

Mr. Donovan, president of the new Society, has for years been a member of the American Institute of Architects and active in national committee work. He is on the School House Building Committee of the National Education Association, and Honorary Member of the National Council of School Officials.

Some of the architects present at the meetings organizing the new Society were Chas. W. McCall, Wm. G. Corlett, Jas. Narbett, Harris Allen, W. E. Schirmer, C. I. Warnecke, John J. Donovan, R. F. Keefer, Howard Schroder, E. G. Bangs, Ralph Wastell, Frederick H. Reimers, G. E. Ellinger, Roger Blaine, M. Williams, W. R. Yelland, Chester H. Miller, David Olsen, Hugh White, E. W. Cannon, Andrew Haas, Chas. F. Roeth, Albert J. Loubet, and W. A. Rich.

Granted Certificates

At the meeting of the State Board of Architecture, Northern Division, September 28, the following were granted certificates to practice architecture in this state:

Leonard H. Ford, 1435 Harrison street, Oakland.

William Clement Ambrose, 9 Brookside avenue, Berkeley.

Harry J. Devine, 1405 — 41st street, Sacramento.

Thaddeus Joy, 2816 Derby street, Berkeley.

Andrew H. Knoll, 222 Kearny street, San Francisco.

Jan Hendrik de Lange, Aptos, Calif.

Ernest R. De Chenne, 4128 Gilbert street, Oakland.

Tribute to Mr. Mullgardt

A fine tribute is paid Louis C. Mullgardt, architect of San Francisco, by Hubert G. Ripley in his comments of "Office Buildings of the '90s," in the September Architectural Record.

"Until the Custom House Tower was built on top of the old Greek temple which formerly sheltered Bancroft and Hawthorne, the Ames building was the tallest Boston structure," writes Mr. Ripley. "It is a most distinguished building, thirteen stories in height, built of Indiana limestone. Its walls, like those of the Exchange building, are massive and self-supporting. It was, in a way, the swan song of the Romanesque Revival of the 'eighties. This style possesses great virility, however, and seems to be in favor again now.

"In mass, the Ames building is imposing, and in detail, it shows a strong Richardsonian flavor. It is the work of Shepley, Rutan and Coolidge, successors to H. H. Richardson, who, when the building was designed, still retained in their employ men who had helped make the Old Office famous. Among these men may be mentioned Dick Schmidt, Louis Mullgardt, Ed. Maxwell, Brown, and a number of others whose names have escaped us for the moment. At the present time, Dick Schmidt is one of the big architects of Chicago; Maxwell and Brown, with the higher-ups of Montreal, and Louis Mullgardt, that gentle, sprightly, lovable genius than whom no more joyous and fascinating companion, associate, friend and counsellor could be imagined, is holding up the oriflamme in San Francisco. When Louis designed the Fisheries building for the Columbian Exposition in 1893—(H. I. Cobb was the architect whose name was appended to the drawings, but in conception, plan and detail the work was wholly Mullgardt's) he became a national figure, as that building was and is still generally considered one of the outstanding achievements of a notable group.

"Then Louis, after a sojourn in St. Louis, where he shortly had Eames and Young groggy, so that they had to send out S.O.S. calls to New York, Boston and Chicago, made an extended stay in London, completely upsetting the traditions of Norman Shaw and paving the way for Harvey Corbett twenty years or so later. One of his recent achievements, subsequent to his brilliant success at the San Francisco Exposition, was the designing of a most remarkable bridge ten or twenty miles long, crowned with an

amazing array of scintillating buildings of all kinds, a vast city of one street that soars loftily above the foam-tipped waters of the Hellespont that separates San Francisco from Berkeley or Oakland or some place or other. To our mind, Louis Mullgardt was one of the first of the 'moderns' and the greatest of pontists. He busted tradition wide open in the early 90's and has been playing with the pieces ever since."

Builders Exchange Office Building

Architect Frederick H. Meyer of San Francisco has completed preliminary sketches for a fifteen-story Class A exchange and office building at Mission and New Montgomery streets for the San Francisco Builders Exchange. The structure will have four hundred offices besides a number of stores and an exchange floor. The cost is estimated at $900,000. Construction will start early in the new year.

Marysville Theatre

Plans are being completed by Architects Bliss & Fairweather of San Francisco for a $200,000 playhouse at Marysville. The structural plans are being drawn by Engineer T. Ronneberg of San Francisco. The theatre will seat 1600 persons and in addition to the auditorium the building will have four stores and eight offices.

Stockton Firm Busy

The architectural firm of Davis and Pearce, Delta building, Stockton, is busy with a number of important commissions, including a five-story brick hotel at Napa, a two-story brick nurses' home for San Joaquin county, Stockton, and a group of high school buildings at Marysville, the latter to cost $350,000.

College Group

Upwards of $1,000,000 will be expended by St. Ignatius College for a group of five educational buildings in Fulton street, east of Parker, San Francisco. The group will include an academy of science, high school, gymnasium and power house. Charles J. I. Devlin is the architect.

Richmond High School

Plans have been completed by Architects Louis S. Stone and Franklin K. Warner of Oakland for a group of high school buildings at Richmond, estimated to cost $575,000. Bids are now being received and will be opened by the Richmond Board of Education October 25th.

County Hospital Group

Architects Franklin T. Jorgenson and Newton Ackerman of Eureka have been commissioned to prepare plans for county hospital buildings near Eureka to replace those recently destroyed by fire.

Architectural Show

The management and standing committees for the Second Architectural and Allied Arts Exposition to be held in New York February 21st to March 5th, 1927, have already progressed fully in their organization plans.

The exhibition will constitute a comprehensive presentation of architecture, sculpture, arts and crafts, building materials, decorative materials, etc. The exposition will be held under the auspices of Architectural League of New York.

Community Apartments

Plans are being prepared by Architect Henry C. Smith for a $600,000 apartment house on the northeast corner of Buchanan street and Pacific avenue, San Francisco. The owners are a corporation composed of the architect, Carl Plant, Charles Heyer, Jr., and others. The building will have twenty apartments, varying in size from five to twelve rooms; also, twenty-five servants' rooms and a thirty-two car garage.

Sixteen-Story Apartment House

Plans are being completed in the offices of Architects Weeks and Day, San Francisco, for a sixteen-story apartment house to be erected on the southwest corner of California and Jones streets, San Francisco, for E. B. De Golia and associates. The main building will be ten stories with a sixteen-story tower. Contract for the structural steel has already been awarded.

J. Wilmer Hershey

Architect J. Wilmer Hershey, aged 31, of Pasadena died August 29 at his home, 1078 Denver street, Pasadena, after an illness of 10 months. He was a graduate of Carnegie Institute of Technology, Pittsburgh, Pa., and had practiced architecture in Pasadena about three years.

Addition to Bank Building

Architects Summerville and Putnam, Commercial Exchange building, Los Angeles, are preparing plans for alterations to the Merritt building, 8th street and Broadway, Los Angeles, for the Pan-American Bank.

Crane Company Addition

An addition to the Crane warehouse, Second and Brannan streets, San Francisco, is to be built from plans by Architect Louis P. Hobart, Crocker building, San Francisco. The improvements will cost $100,000.

Embassy Club Building

A site has been purchased on Bush street, near Kearny, San Francisco, for an eighteen-story hotel and club building for the Embassy Club. The plans are being prepared by William H. Weeks of San Francisco and Oakland.

Personal

Architect W. H. Weeks of San Francisco has opened a branch office in the Burrell building, San Jose. A branch office is also located at 1924 Broadway, Oakland.

Architect Paul R. Williams announces the removal of his office to the Wilshire Arts building, 3839 Wilshire boulevard, from the Stock Exchange building, Los Angeles.

Architects Walker & Eisen have moved their offices from the Great Republic Life building to the Western Pacific building on Broadway between 10th and 11th streets, Los Angeles. At present they are occupying temporary offices on the fourth floor with the entrance at 407.

Architect Harold Cross has moved his offices from the Merchants National Bank building to suite 555 Metropolitan Theatre building at 6th and Hill streets, Los Angeles.

Architects Gogerty & Weyl have moved their offices from 820 - 21 Hollywood Guaranty building, Los Angeles, to 518-19 same building.

Marine View Apartments

Plans have been completed and the contract has been let to the Dinwiddie Construction Company of San Francisco for a thirteen-story steel and concrete community apartment house in Chestnut street, east of Larkin, San Francisco, for the Marine View Apartments, Inc. The plans were prepared by Willis Polk & Company of San Francisco.

Arcade Building for Oakland

It is announced that a thirteen-story arcade and office building is being planned for the site of the Southern Pacific electric terminal depot at 14th and Franklin streets, Oakland. The property was recently purchased from the railroad by Charles Schlessinger and associates for $3,000,000.

Biltmore Hotel, Santa Barbara

Architect Reginald Johnson of Pasadena has been commissioned to prepare plans for the new Biltmore hotel at Santa Barbara. It will have one hundred rooms in addition to a number of cottages on the hotel grounds.

Designing Many Cottages

Architect A. M. Milwain, 731 Alma avenue, Oakland, is preparing plans for a group of twenty or more cottages and bungalows to be built in the Rodeo town site, Contra Costa county.

Engineer Visits East

T. Ronneberg, structural engineer, spent the latter part of September visiting friends in Chicago and other Eastern points. He was accompanied by Mrs. Ronneberg.

Architects Not Responsible

Architects who exercise "reasonable care and diligence" in preparing plans cannot be held responsible for any faults that may appear in a building built from those plans, or for any faults in the plans themselves, according to a ruling recently made by the Supreme Court of Oregon in affirming the judgment of the Multnomah County circuit court. (247 P. 316, June 29, 1926.)

Not only architects of the Pacific Northwest, but builders and contractors have shown a marked interest in the ruling.

F. Manson White, architect, Portland, prepared plans and specifications for a building to be erected by M. Pallay, Portland, the owner. A reasonable fee for this service, according to Mr. White, was $3,545.55. White agreed, however, to accept as his fee the sum of $2500, providing that Pallay would retain him as the architect on another building that he was then contemplating. Pallay agreed.

Sometime after the first building was well under way, it began to settle. It was necessary to shore up the walls with jackscrews and to enlarge the foundation, which work added $1700 to the cost of the building. Pallay, the owner, felt that the architect was responsible for this added and unforeseen cost.

Pallay had paid White $1250 of his fee but he refused to pay the balance, on the grounds that the fee was to be $2500 instead of $3545. However, Pallay did not retain White to design the second structure, on which work hinged the lower fee on the first building.

White went to court to recover the balance of the $3545 originally agreed upon. The circuit court gave judgment for the full amount, but Pallay appealed. The supreme court, in affirming the lower court's judgment, made two important findings, both in favor of the architect: (1) Because he had exercised the "care and skill" of ordinary architects, at least, in examining the site and designing a building for that site, White could not be held responsible for any faults in the building or in the plans themselves. (2) White was entitled to the full fee of $3545 because the lower price of $2500 was dependent upon his being retained for the second building.

The court (Justice J. Burnett) said in part:

"The theory of the defendant (Pallay) is that he contracted for plans and specifications which, when carried out, would produce a certain result. In substance his (the owner's) position is that the plaintiff warranted that his plans and specifications would produce that result, and, because they failed and required amendment, and added work was necessary, the plaintiff (the architect) must pay damages. The rule on this subject is thus stated in 5 C. J. 269:

" 'In the preparation of plans and specifications, the architect must possess and exercise the care and skill of those ordinarily in the business; if

he does so, he is not liable for faults in construction resulting from defects in the plans, as his undertaking does not imply or guarantee a perfect plan or a satisfactory result, it being considered enough that the architect himself is not the cause of any failure, and there is no implied promise that miscalculations may not occur. Where, however, the architect does not possess and exercise such care and skill he will not only be liable in damages for defects in his plans but he cannot recover compensation for them.'"

Southern California Architects

The following applicants were granted architects' certificates at the last meeting of the California State Board of Architecture, Southern District: Virgil D. Westbrook, 1115 Mendocino street, Altadena; Robert O. Boller, 114 W. 10th street, Kansas City, Mo., and 340 Douglas building, Los Angeles; Wendell W. Warren, 1491 Whitefield road, Pasadena; Roland Frederic Sauter, 107 E. de la Guerra street, Santa Barbara; and Louis L. Dorr, 641 Pacific Mutual building, Mary Taylor Cantell, 1523 Morningside Court, and George J. Lind, 3215 W. Sixth street, Los Angeles.

Assistant Architect

Applications for assistant architect must be on file at Washington, D. C., on or before November 9. The examination is to fill a vacancy in the Bureau of Yards and Docks, Navy Department, Washington, D. C., and vacancies occurring in positions requiring similar qualifications. The entrance salary is $2,400 a year. The duties consist of detail architectural drafting and design in connection with the construction of quarters, hospitals, barracks, etc., and the writing of specifications for this class of work.

Berkeley Architect Moves

Architect W. H. Ratcliff, Jr., has moved his offices from the Mercantile Bank building to the new Chamber of Commerce building, Berkeley. The new offices are large and conveniently located. New work in Mr. Ratcliff's office includes a two-story reinforced concrete addition to the Hink department store building in Berkeley and estimated to cost $150,000. In the same office plans are being completed for a $50,000 parish house for the Westminster Presbyterian Society.

Wants Catalogs

Architect Howard H. Wells announces the removal of his offices to suite 1, La Brea Security building, corner La Brea and Melrose, from the New Orpheum Theatre building, Los Angeles. Mr. Wells desires material samples and catalogs.

Fallon, Nevada Hotel

The Fallon Hotel Company of Fallon, Nevada, has commissioned Architect F. J. DeLongchamps of Reno and San Francisco to prepare plans for a sixty-five room hotel. It will be Class C brick and will cost $100,000.

COMPETITIONS

SMALL HOUSE DESIGNS

The Chicago Tribune announces an architectural competition for designs for small homes. Two classes of houses are to be considered. One is for a five-room home with two bedrooms, the other is for a six-room home with three bedrooms.

Architects, architectural draftsmen, and students are invited to submit one, but not more than one, design in each class. All draftsmen, whether licensed or not, are eligible.

Prizes aggregating $7,500 in cash will be awarded to the architects or draftsmen submitting winning designs. Cash awards will be made as follows:

For first prize design in each class at $1,000 each	$2,000
For second prize design in each class at $750 each	1,500
For third prize design in each class at $500 each	1,000
For fourth prize design in each class at $300 each	600
For fifth to tenth prize designs in each class at $200 each	2,400
Twenty cash prizes, totaling	$7,500

The jury of award for the Chicago Tribune Small Homes Competition follows:

John M. Howells and Raymond Hood, architects of Tribune Tower.

Louis James Bargelt, Home Builders Editor of The Chicago Sunday Tribune Real Estate and Home Builders' Section.

Al Chase, Real Estate Editor of The Chicago Tribune.

Holmes Onderdonk, Manager of Chicago Tribune Properties.

Earl H. Reed, Jr., of the American Institute of Architects will act as professional adviser.

The competition will close at 5 p. m., Wednesday, December 1, 1926.

For complete information, write immediately for a copy of the program. Address The Chicago Tribune Small Homes Competition, Tribune Tower, Chicago.

HOUSE BEAUTIFUL COVER DESIGN

The House Beautiful Cover Competition has been an annual event now for the past four years. The announcement of the fifth competition offers, in addition to the first prize of $500, four special prizes of $250 each, and six honorable mention awards. The Student Certificate of Merit (with honorarium), offered for the first time last year, is continued this year for the best design submitted by a student in any school of art. The exhibition of one hundred or more of the best designs, which has been a feature of the competition since the beginning, will be further extended this year, and covers will be shown in all the important cities from coast to coast. The competition closes January 14, 1927. Full particulars regarding it may be obtained from the Competition Committee, House Beautiful, 8 Arlington street, Boston, Mass.

Schedule of Charges Recommended by Architects League of Hollywood

THE Architects League of Hollywood, which is conducting a commendable campaign to put the architectural profession on a paying basis, has prepared a schedule of professional charges, based upon the schedule established by the American Institute of Architects. Architects are urged to adopt it. A complete text of the document follows:

The usual professional services of an architect consist of necessary conferences, the preparation of preliminary studies, working drawings, specifications, large scale and full size detail drawings, draft of forms of proposals and contracts, the issuance of certificates of payment, and supervision of construction work. The architect endeavors to guard the owner against defect and deficiencies in the work of the contractors, but does not guarantee the performance of their contracts.

NOTE: It is very essential that the architect and client thoroughly understand the difference between **supervision** and **superintendence**. Architectural supervision is the usual service consisting of time spent in the office and visits of inspection to the building during its construction, and is extraneous to the service encompassed by the draughting, and said visits shall be at the discretion of the architect as and when he may deem necessary. Superintendence is continual service on the job and is a position held by an assistant directly representing the architect. He is employed by the architect and his salary is paid by the owner in addition to architect's fees.

The architect will, if the client so desires, make or procure preliminary estimates on the cost of the work or any part thereof and will endeavor to keep the actual cost of the work as low as may be consistent with the purpose and character of the building, and with proper workmanship and material. No estimates at any time procured or submitted by the architect are to be considered in any way a representative agreement or guarantee on the part of the architect of the correctness of such estimate or that the work can or will be done for the amount thereof.

1. The proportion alloted to each branch of the professional services is as follows, and should the works be stopped for any reason whatsoever, the architect shall be remunerated according to the services he has rendered based upon the percentage quota for each division of service as segregated hereunder:

Sketch plans	20% of total fees.
Working drawings	50% of total fees.
Details	10% of total fees.
Supervision	20% of total fees.

2. The proper MINIMUM charges for such services are as follows:

(a) In the case of warehouses, factories and large plain buildings, involving no detailed interior finish, 5 per cent of total cost of the works.

(b) In the case of public buildings, schools, hospitals, libraries, office buildings, banks, hotels, clubs, apartment buildings and other buildings, except as hereinafter mentioned, 6 per cent of the total cost of the works.

(c) In the case of churches, 8 per cent of the total cost of the works.

(d) In the case of residences, 10 per cent of the total cost of the works.

(e) Alterations up to $5000, 20 per cent of the total cost of the works; over $5000, 15 per cent (minimum) of the total cost of the works.

NOTE: The words "total cost of the works" mean the total cost of the finished and completed building, not including the architect and engineer's fees or the salary of the clerk of the works.

3. Payments are due as follows:

(a) A retainer fee as may be agreed upon but should not be less than ½ of 1 per cent of the proposed total cost of the works.

(b) Balance up to 20 per cent of the architect's fee based upon the estimated cost of the building upon instructions to proceed with the working drawings.

(c) Balance up to 45 per cent of the estimated total cost of the works when working drawings are half completed.

(d) Balance up to 80 per cent of the estimated total cost of the works when working drawings, scale details and specifications are completed.

(e) Final balance, namely 20 per cent, to be paid pro rata as and when the certificates are issued by the architect to the contractor.

4. In the event of the architect being required to supervise the works under the separate contract system as distinguished from a general contract, then his fees for these extra services shall be increased at least 50 per cent of the fees agreed upon for usual architectural services.

5. For selecting and purchasing of furnishings, draperies, etc., a fee of 5 per cent upon the total cost of same shall be made.

6. For designing decorative interiors, fittings, furnishings, monumental or other special work outside the scope of usual architectural details, the fee will be regulated by special circumstances and conditions, but in any event not less than 10 per cent of the total cost of same.

7. When it is necessary to have supervision other than the architect's usual supervision, the architect will appoint a clerk of the works whose salary shall be paid by the owner in addition to the commission paid to the architect.

8. None of the fees above enumerated cover charges for professional services rendered in connection with litigation in consequence of the delinquency or insolvency of the owner or of a contractor.

9. Where heating, ventilating, mechanical, electrical and sanitary problems are of such a nature as to require the services of a specialist the fee will be increased to cover the cost of such services. Chemical and mechanical tests, when required, shall be paid for by the owner.

10. The services of an architect do not include any legal work necessary in the preparation of contracts or any negotiations with respect to property, party walls, or such matters.

11. No deduction is made from the architect's fees on account of the use of old materials, penalty, liquidated damages or other sums withheld from payments to contractors.

12. Clients shall furnish and pay for property surveys, contour maps, building permits and all other similar disbursements.

13. In matters calling for charges by the day, the charges per day will depend upon the architect's professional standing, but the minimum shall not be less than $50 per day, or part of a day.

14. All the foregoing commissions and charges are for services rendered within the city or town in which the offices of the architect are situated. For service beyond these limits a charge per day for the architect's services and his assistants may be in addition to the above mentioned minimum schedule for fees, and all his traveling and other incidental expenses shall be paid by the client.

15. If after a definite scheme has been approved the owner makes a decision, which, for its proper execution, involves extra services and expense for changes in or additions to the drawings, specifications or other documents; or if a contract be let by cost of labor and material plus a percentage or fixed sum; or if the architect be put to labor and expense by delays caused by the owner or a contractor or by the delinquency or insolvency of either, or a result of damage by fire or other casualty, he is to be equitably paid for such extra service and expense.

16. Drawings and specifications as instruments of service are the property of the architect, the copyright in the same being reserved to him, but the client is entitled to a set of prints of the plans and specifications of the building as a matter of record.

17. When labor or material is furnished by the owner, below its market cost, or when old ma-

terials are re-used, the cost of the work is to be interpreted as the cost of all materials and labor necessary to complete the work, as such cost would have been if all materials had been new, and if all labor had been fully paid at current market prices when the work was ordered, plus contractor's profits and expenses.

The Engineer

DR. A. B. STEINMAN, the retiring president of the National Association of American Engineers, has rendered his fellow engineers a service during his term of office, by bringing a spirit of unity into the organization and pointing out a progressive program for the continued existence and growth of our Association.

Following are a few excerpts from his speech delivered before the national convention at Philadelphia June 14th:

"The engineer is one of the highly trained, practical, efficient, hard-working, creative and indispensable servants of society. The engineer, of all professional men, is the greatest contributor to the economic progress and wealth of the community."

"The community, or nation, that best develops and applies the brain power and inventive genius of the engineer will be the most prosperous."

"We are striving, through organized effort and publicity, to secure for the engineering profession its rightful place in public esteem, and for the members of that profession more adequate recognition and recompense for their services to society."

"Through educational publicity we must conduct a persistent campaign to discourage the abuse of our professional title."

"Through registration laws we must seek to restrict the use of the designation 'engineer'."

"The American Association of Engineers is the only national organization devoted to the human side of engineering. Its purpose is to bring engineers together in a professional brotherhood in mutual understanding, helpfulness and co-operation."

"We are uniting our efforts to make pleasanter the relations and working conditions within the profession. We are seeking to relieve the engineer of economic pressure so that his best energies may be free for his high service to civilization and human progress."

Two-Story Class A Schools

Although the Los Angeles Board of Education, the Superintendent of Schools, architects, engineers, contractors, and the Building & Safety Commission of Los Angeles, are agreed that an ordinance regulating the construction of school buildings is necessary, the various groups have not been able to agree upon the type of ordinance that should be enacted.

The proposed ordinance would require all school buildings of two stories or more in height to be of Class A construction.

In opposing the ordinance, members of the Board of Education contended that they were perfectly willing to construct all buildings of three stories, or more, of type A construction, but to force them to construct two-story buildings of this type would seriously handicap future school building construction in Los Angeles.

C. L. Peck, member of the Board of Education, estimated that should the proposed ordinance, as presented, be passed it would require an additional expense of about 15 per cent. Of the $34,000,000 bond issue voted two years ago, there remains approximately $6,000,000 to be expended for school building construction, for which plans have been prepared.

Cost of Hetch Hetchy Project

The city of San Francisco has to date spent $46,647,488.17 on its Hetch Hetchy project, according to figures announced by City Treasurer John H. Theiler. Of the $42,000,000 realized, due to a slump in the bond market, from the $45,000,000 bond issue of 1910, but $15,000 remains, and this is covered by outstanding bills. Theiler announces the city has left only $1,337,511.06 of the $3,000,000 obtained from sales of the 1925 bond issue. Of the $7,000,000 unsold balance of this issue, $2,500,000 will be required within a few months to carry on tunneling in the foothill division. The city has paid off $7,000,000 of 1910 bonds and is paying off the remainder at the rate of $1,000,000 a year.

Mr. Kyson Elected President

Charles Kyson was elected president of the Architects' League of Hollywood at the annual meeting, October 6th. John J. Roth was chosen vice-president and Horatio W. Bishop secretary-treasurer. These officers will serve for one year. The following directors have been elected to serve for two years: Walter H. Parker, Ellet Parcher, Harold Miles, Rollin S. Holbrook and Edwin D. Martin.

To Enforce Wage Scale

All firms or individuals having contracts in connection with the new $700,000 Santa Barbara county courthouse will be required to pay workmen the prevailing wages, Wm. Mooser, architect, declared at the last meeting of the Santa Barbara county supervisors. All specifications call for the Santa Barbara wage scale as a guarantee for good workmanship, Mr. Mooser said.

Need for Inspection of Cast Iron Pipe

By FRED M. RANDLETT,
Pacific Coast Manager, Robert W. Hunt Company, Engineers

CAST iron pipe, whether used for the transportation of water, gas, or oil, should be made of such material and in such a manner as will make it safe and reliable.

To the engineer or manager of any utility plant or corporation having to do with constant service to the consumers, it is a self-evident fact that breaks, failures, and interruptions of service are not only expensive but, in the majority of instances, dangerous to life and health, causing annual damage and loss of business hard to calculate in dollars and cents. It is therefore the duty and desire of every honest official or owner to make every reasonable effort to procure the best materials and perform the work of construction in the most approved manner, thus assuring against trouble and expense otherwise quite usual.

First comes the design of the system, in which the sizes and quantities are determined.

Second, specifications must be drawn to describe fully the materials to be used in the manufacture of the pipe and appurtenances, stipulating the allowable deviation of the various elements in the composition, detailing whether or not annealing is required, and to what extent, stipulating the tolerances as to dimensions and weights, and prescribing the tests, both physical and chemical, that must be passed to make acceptable material.

Third, regardless of where or under what conditions the materials are purchased, or what the contractor may furnish, it is essential to arrange for competent, honest, and efficient inspection and supervision during the process of manufacturing and testing. Furthermore, to avoid delays and disputes, this inspection or supervision must take place, if possible, at the time the material is being manufactured, and not at the point of destination or after it has been dipped or painted or allowed to accumulate rust and dirt.

The inspection of cast iron pipe and specials should be done by disinterested persons having no connection, financial or otherwise, in the contract or plant, and preferably not interested in the purchase price from the buyer's standpoint. The inspectors should have had long and continuous experience as inspectors of cast iron pipe and fittings. If such inspectors are employed, they will check over the mill or foundry orders and specifications, seeing that they agree with those furnished them by the purchaser. They will witness the charging of the furnace or cupola, see the molds prepared, and that cores, when used, are properly made and placed; see that the iron is at the proper heat when poured, and the pipe properly cooled before being removed from the molds, and that nothing is done to set up internal stresses from uneven cooling or other avoidable processes.

In the case where annealing is specified, they will see that the temperature is right and that each and every piece is held at the proper temperature for the specified time, or to obtain the results specified. After being removed from the molds and cleaned, each and every piece should be examined for defects and checked for dimensions, the hydraulic testing, coating and weighing should be witnessed, and finally the tallying of the loading for shipment, if directed by the purchaser.

The foregoing procedure has been found necessary, not because any reputable foundry or plant intends to furnish a product that deviates from that specified in the contract, but because no human effort is infallible and no plant 100 per cent efficient at all times, and by efficient inspection such errors and faulty materials are at a minimum and consequently the liability of damage and dispute eliminated as far as possible.

Some purchasers choose to perform inspection work more or less as outlined above, by using employees in their own organization, but after some years of experience and from information gained from observation, it has been proved that the best results are obtained by having an organization with employees, engineers, and chemists trained and skilled each in his particular line and having no interests other than those similar to the professional interests of the engineer, doctor and lawyer to their respective clients.

Another feature, almost if not quite equal in importance, is the fact that an organization enjoying a sufficient volume of business is able to keep inspectors on the job who are familiar with the particular practices employed by the plants with which they are acquainted, and are therefore able to detect any deviation from the regular routine, which might pass unnoticed by an inspector who is only at the plant occasionally or who never has seen that particular plant in operation. The receipt of inspection certificates, previous to arrival of shipments, enables the purchaser to know the number of lengths with the serial number of each accepted piece and of each rejected piece, as well as the causes for rejection, and shows the gen-

eral history and progress of the order from its origin.

The engineer is interested because it assures him that his instructions and plans are being followed. The manager is interested because he must avoid disastrous mishaps and interruptions that are costly and that consequently draw on funds for repairs and damage that might have been avoided.

The owners, whether as individuals represented as stockholders, or in the case of municipal ownership as customers, should be particularly interested in efficient inspection of all materials going into the plant, because the elimination of faulty material directly affects the earnings of the plant and the cost of service.

BOOK REVIEWS

Edited by
CHARLES PETER WEEKS

Ship Model Making By Captain E. Armitage McCann, color frontispiece, scale drawings. Published by Norman W. Henley Publishing Company, 2 West 45th street, New York. Price $2.50.

With the increasing popularity of ship models for home decoration "Ship Model Making," by Captain E. Armitage Mc Cann is a timely book. The author gives a detailed description and drawings of a Barbary Pirate Felucca and a Spanish Treasure Galleon. The designs are for "sketch models" from which there has been eliminated such detail as would make construction by the amateur difficult. There is retained, however, truthfulness of line, scale and nomenclature. With the aid of the full size drawings and a little patience and perseverance no one should have difficulty in constructing the models described.

VALUABLE BOOKS

The National Terra Cotta Society, 19 West 44th street, New York City, announce two publications of interest to architects, engineers and contractors. "Standard Specifications for the Manufacture, Furnishing and Setting of Terra Cotta" and a permanently bound reference book "Color in Architecture" will be distributed free of charge to architects requesting copies. "Terra Cotta of the Italian Renaissance," a volume devoted to the illustration of old Italian precedent, is furnished to architects and all applicants for $3.00 per copy.

Addition to Rubber Works

Plans have been completed by Architect B. G. McDougall, 393 Sacramento street, San Francisco, for a steel frame and reinforced concrete addition to the factory of the Pioneer Rubber Works, Pittsburgh, Contra Costa county. The improvements are expected to cost $140,000.

INDUSTRIAL NOTES

Oakland Plant in Operation

Doubling its Pacific Coast production and delivery facilities, the Detroit Steel Products Company placed the new unit of its Oakland plant in service July 1. By far the greatest portion of this plant will be used for the manufacture and storage of Fenestra windows for the Coast building trade.

Three years ago the Detroit firm, aware of the enormous potentialities of the building market west of the Rockies, determined to establish a branch plant in California to provide Pacific Coast contractors and builders with prompt production and delivery service, and at the same time to eliminate the item of long distance shipping costs. Advantages in convenience and price thus afforded were immediately appreciated by the trade, and it soon became apparent the original plant was much too small to meet the demand. Accordingly, a year later it was exactly doubled, another 25,000 sq. ft. unit being added. Steadily increasing demands on the plant's output continued, however, and this year a still further growth of the factory became imperative. This time 50,000 sq. ft. were added, bringing the total floor space available for production and warehousing up to 100,000 sq. ft.

In three years the California plant has multiplied its size by four. For the southwest a branch warehouse is maintained in Los Angeles which houses a complete sash stock ready for immediate delivery.

Industrial Shading Equipment

With the general adoption by the newer industrial and factory plants of large side-wall areas of steel sash, there has developed a necessity for proper shading equipment to solve the problem of the glare of the sunlight, heat radiation from large glass areas and window ventilation.

Ra-Tox wood fabric shades are said to offer the solution for these problems. By a unique patented off-set bracket arrangement a center swing steel sash ventilator may be opened to its widest swing without in any way interfering with the shade when it is drawn completely down.

The thin Basswood strips act as an insulation against the heat radiation from the glass, actually reducing inner temperatures from 10 to 15 degrees. By filtering light into a room, with all glare removed, they permit from 30 to 40 per

cent more light in than do other types of shades.

All factory experts are agreed that proper shading and ventilation are essential for volume production. Workers cannot produce efficiently when laboring under the disadvantages of poor light, glaring light or poor ventilation.

A few of the local plants that have installed Ra-Tox shades, are: Westinghouse Electric Co., Montgomery Ward & Co., Western Electric Co., Richmond Sanitary Co., P. E. O'Hair & Co., S. F. Bowser & Co., Kennedy Valve Mfg. Co., Metal & Thermit Corp., Sunset Magazine, Inc., Chronicle Publishing Co., and a number of others.

Ra-Tox shades are distributed and installed throughout California by J. E. Rodgers & Co., Sharon building, San Francisco.

On City Planning Board

Architect Edwin J. Symmes has been appointed a member of the Alameda City Planning Commission to succeed Henry F. Schlichting.

Wins First Honors

Architect H. Roy Kelley of Pasadena was awarded first prize of $1000 in an architectural competition conducted by the "Own Your Own Home" magazine. Plans were submitted for a seven-room, two-story house of Spanish-Mediterranean style.

Oakland Physicians Building

Plans have been completed by Architects Frederick H. Reimers and James T. Narbett, associated, for a twelve-story Class A physicians and dentists office building to be erected on the east side of Franklin street, near 17th, Oakland, for the Bacon Land Company. The estimated cost is $600,000. Mr. Narbett has opened an Oakland office in the Richfield Oil building.

NEW TRADE PUBLICATIONS

THE OVERCOAT PLAN

National Steel Fabric Company has published a portfolio of its 1926-27 "Overcoat" plan that is notable for detail and attractive arrangement. It is a big book produced for a big purpose. The "Overcoat" plan was inaugurated by the National Steel Fabric Company in 1925 and despite many obstacles, has been taken up and given whole hearted support by the building crafts. Such initial achievement has spurred the company to double its 1926-1927 efforts as mirrored in the splendid contents of the portfolio.

LOCKTYLE CONSTRUCTION

A perfected concrete floor construction under the descriptive name of "Locktyle" has recently been developed and is now being marketed by the Truscon Steel Company, Youngstown, Ohio. The advantages of Locktyle construction are said to be many, but first and foremost is the speed of erection, since no time is lost in making attachment of the ceiling lath to the floor forms. The engineers of the Truscon Steel Company point out that in this construction the ribs of the lath serve as ties for the tyle arch, making it impossible to collapse an arch during the pouring of concrete.

Painters to Meet

The first annual convention of the Western Painting and Decorating Association is scheduled for November 4, 5 and 6 at Portland, Ore. A general meeting of the painters and decorators of California, Oregon, Washington and Montana will be held in Portland at the same time. Horace Mann of Los Angeles will preside.

Opens San Jose Office

Frederick W. Williams, formerly of San Francisco, has opened an office in the Commercial building, San Jose, for the practice of architecture. Mr. Williams was for a number of years identified with prominent construction work in Honolulu.

* * * *

Cleaning Face Brick Walls

By D. A. CANNON
President, Cannon & Company

HOSE down walls thoroughly before applying acid solution thereby saturating brick with water to prevent penetration of acid. Use one part muriatic acid to twenty parts water. After scrubbing, again hose the wall thoroughly to remove all of the acid. This method causes no discoloration of brick. If the acid is too strong or is not thoroughly washed off, it attacks the iron in the brick, forming a coating of ferrous chloride of a dark green color on the face of the brick.

This ferrous chloride is soluble, and the easiest way to remove it is to spray or brush the building with an alkaline solution of potassium carbonate and water. Use enough potassium carbonate powder to make the water feel soapy between the fingers. This solution should be applied hot to give the best results. The potassium carbonate neutralizes the acid, loosens the green scale and turns it into a white powder, which blows away in the wind. It is not necessary to scrub this green discoloration, but if first application is not sufficient, apply a second.

CAUTION—Potassium carbonate will ruin paint and discolor metal.

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Dwelling Shortage Fast Being Taken Care Of

IN its national survey of construction conditions the American Construction Council notes the following findings:

Although the first few months of 1926 showed the greatest volume of building construction yet seen for the same period of any year and exceeds by 20% the similar period for 1925, which itself was a record breaking building year, this condition is not uniform as some localities show a recession and there are some indications toward greatest moderation.

It is difficult to tell whether the growth of new industrial and commercial buildings will continue to go down on the books. A distinct note of caution has been sounded by many individuals and many groups. In the matter of high priced apartments and hotels a similar note of caution has been sounded. It is only in the group of medium priced well built private dwellings that the demand seems to warrant real optimism. This demand for homes must not be confused with artificial real estate booms.

What is needed as to volume of construction is of course steady all-year-round and year-in-and year-out work on a sound level, and whatever can be done to maintain this is much more important than mere peak production. In addition to what is being done by the industry itself, the efforts of the Federal government as well as of various states toward this end in the scheduling of public building programs is highly commendable.

The outstanding need still remains that of suitable housing for persons of average means at a fair price. What the Council pointed out last Fall still holds true—that the large volume of building construction has not yet met the country's real housing need! City residential construction continues in the main to be of the larger and higher priced apartments and hotels, and the more active suburban home developments are still too frequently high in price or inferior in quality.

The construction of large buildings is reflecting more and more, however, the increased demand of the public for better built buildings as urged by the Council for the past several years, and a similar demand is beginning to show itself on the part of the prospective home owner of moderate means as evidenced by the

A distinctive floor of *Gold Seal* Marble-ized Tile, alternating tiles of black and white with white and black—in the residence of W. S. McKenzie of Smith, Hinchman & Grylls, Architects and Engineers, at 1116 Yorkshire Road, Grosse Pointe Park, Michigan.

Decorative Floors—

There is a decorative idea worth analyzing in the entrance hall illustrated above. In this interior, harmony is attained by means of contrast—on the one hand, the restrained and dignified simplicity of paneled woodwork, bare plaster and plain arched passageway; on the other, the luxurious floor of *Gold Seal* Marble-ized Tile.

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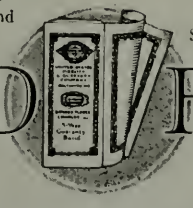

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nation-wide demand for the Council's recent pamphlet "Six Steps in Building or Buying a Home" which has received the hearty approval of the responsible elements of the various branches of the construction industry as well as of the public. But further awakening of the public consciousness to the value of better building and an ever present insistence on the part of the home buyer that he get real value for his money are still needed.

The Council urges the prospective home owner to deal only with reliable persons in all the stages of buying or building a home—location, financing, design and building. He should also insist upon first class materials and first class workmanship both in the structure proper and in its equipment.

Likewise, the investing public whose money goes into mortgage bonds and other present day forms of financing large building construction should insist upon first class construction in both materials and workmanship on all buildings into which it puts its money and deal only with reliable loaning institutions from whom it can obtain full facts as to not only the nature of the security but the character of the building and supervision of the structure itself. In doing this the public must consider every building as a separate and distinct problem, for the safety of building loans cannot be characterized as a whole as either safe or unsafe.

As the Council noted in its statement last fall, the passing of the acute building shortage and temporary building booms in some localities with the consequent return to normal consideration of building values will make structures of inferior quality an increasingly heavy liability.

It is such insistence on the part of the public that the essentials of right construction be put into actual practice—from financing of the project and the design and erection of the building to the supervision of the finished structures—that will maintain the building industry on a healthy basis. To make this insistence effective the public must cooperate with persons of skill, vision and responsibility in all branches of the industry.

Regional planning of large and small cities as to both beauty and utility as well as the proper development of smaller centers and suburban districts should have the hearty support of the public. Even the smaller towns and villages which anticipate future growth should conduct intelligent town planning. The flow of traffic to and from the large centers and its relation to building development is also becoming an increasingly serious problem and should receive careful consideration in this connection.

(Concluded on page 133)

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Dwelling Shortage Fast Being Taken Care Of

(Continued from page 126)

The market for building materials continues in general to be satisfactory, although in some branches of the industry a disposition to buy only for immediate requirement is seen.

Labor productivity continues to be relatively favorable which helps to reduce actual costs, although wages have advanced in some instances. Any increases in wages will, it is hoped, carry a corresponding increase in skill and proper productivity.

Money for building purposes continues to be readily available in most locations but the element of caution is playing a greater and greater part in regard to speculative building operations.

Activity in highway construction indicates the largest yearly volume in that branch of the industry yet seen. The Council therefore urges the public to insist that its representatives who have charge of such construction be instructed and given the necessary authority to conduct their program so as to make for more and better highways of first class construction. Otherwise the utility of the highways will soon decline and the taxpayers of the country will in a few years be called upon to duplicate this large expenditure of public money which if wisely spent is a great national asset but if poorly spent becomes only an increasing economic burden.

Architect Sues for Fee

Architect Robert H. Orr of Los Angeles has filed suit at Seattle for $16,448.31, alleged to be due for services in connection with the building of the University Christian Church of that city. Mr. Orr's claim, according to the complaint, is based upon a contract entered into with the church authorities whereby he was to be paid 6 per cent of the cost of the building. Mr. Orr claims that he was engaged to draw the plans and supervise the construction of the building.

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ARCHITECTS' SPECIFICATION INDEX—Continued

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"Mission" stucco, manufactured by the Martin Company, 4054 Harlan Street, Emeryville, Calif.

CEMENT STAINS
Keramik Kemik Stains and Staybrite Colors, Horn Products Company, Builders Exchange, Oakland, Calif.

CEMENT TESTS—CHEMICAL ENGINEERS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.
The A. C. Horn Company, 2119 West 16th St., Los Angeles and Builders Exchange, Oakland.

CLAY PRODUCTS
N. Clark & Sons, 116 Natoma St., San Francisco.
California Brick Co. and Livermore Fire Brick Works, 604 Mission St., San Francisco.
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Gladding, McBean & Co., 660 Market St., San Francisco; 621 S. Hope St., Los Angeles; U. S. National Bank Building, Portland; Dexter Horton Building, Seattle; Twenty-second and Market Sts., Oakland.
Los Angeles Pressed Brick Co., 621 S. Hope St., Los Angeles.
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CLOCKS—ELECTRIC TIME
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LOGGIA, RESIDENCE OF DUNCAN McDUFFIE, CLAREMONT
WILLIS POLK AND COMPANY, ARCHITECTS

The ARCHITECT and ENGINEER

VOL. LXXXVII NOVEMBER, 1926 Number 2

RECENT WORK of WILLIS POLK and COMPANY

By

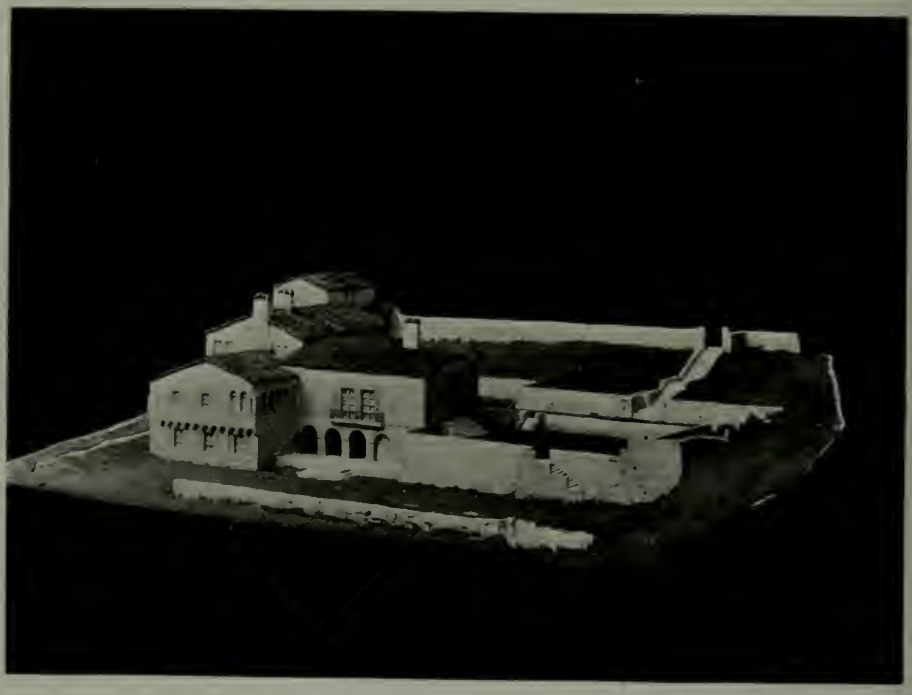
Arthur Brown Jr.

DURING his long and picturesque professional career, Willis Polk developed a manner unmistakably his own and with the practical sense which characterized him, he created an office tradition which made it possible to realize the ideas of his fertile imagination, a result which all architects know to be attended with endless drudgery and worry.

At the time of Willis Polk's death at the zenith of his creative power, it was decided to carry on the high standards and clear-cut tradition of his office, and his assistants, Mr. James H. Mitchell and Mr. Polk's step-son, Mr. Austin Moore, eagerly undertook the difficult task. Mr. Mitchell had been with Willis Polk many years and was thoroughly imbued with his point of view and his lofty ideals. Mr. Moore, who had been trained as an architect, gave up very successful commercial affairs to plunge into the re-establishment of the office and to bring his business experience to bear on the work. This was not a simple task. How admirably the successors have carried on his ideals is well illustrated by the photographs in this issue of The Architect and Engineer.

Willis Polk's poetic interpretations of classic architecture are well known to all students of California architecture. That Messrs. Mitchell and Moore have profited well by the example of their elder confrere is amply proven by the originality and imagination of their recent work—with the solid inherited background they have added the fresh ideas of the modern trend.

In the Duncan McDuffie house appear those romantic and whimsical qualities that so impressed us with Mr. Polk's work. Likewise the Metcalf house shows a family resemblance to the other work of the office.



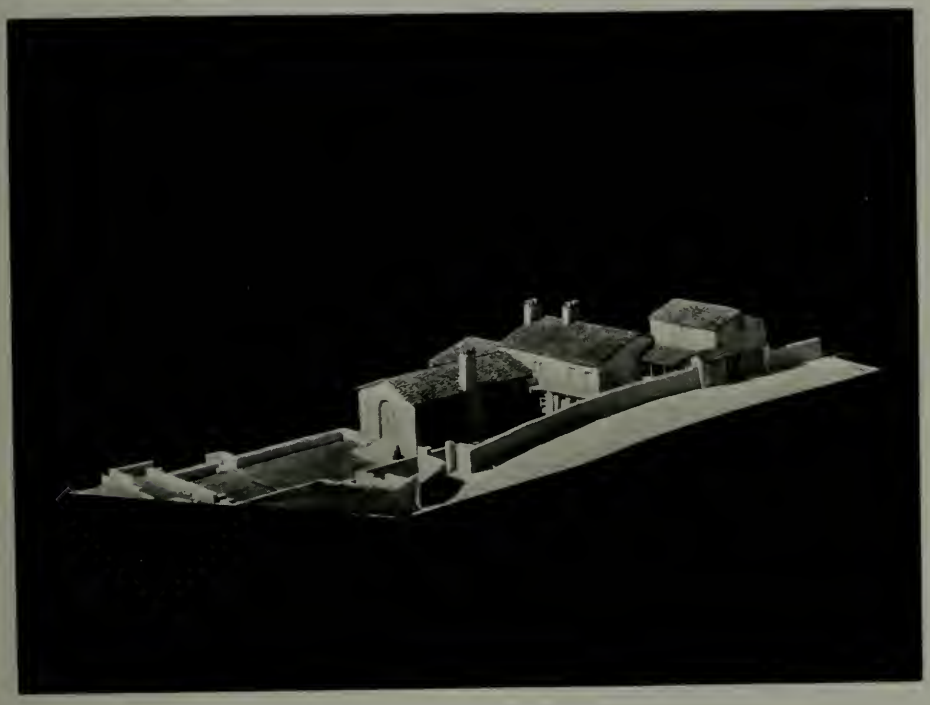
MODEL, RESIDENCE OF DUNCAN McDUFFIE, CLAREMONT
Willis Polk and Company, Architects

These examples serve to show how faithfully the Polk manner has been absorbed by his successors. The Bernard Ford house is another successful design that has been well carried to completion.

Among the new commissions entrusted to Messrs. Mitchell and Moore since Mr. Polk's death are the important club house of the California Golf club, a scheme for a Yacht club, the Community apartments for the Marine View Apartments, Inc., the Garfield D. Merner residence, at Hillsborough, and a number of equally attractive homes that are now under construction.

All these problems have been treated with the same care and distinction that has always characterized the office. The Golf club has been recently finished and the photographs show how well it fits its surroundings and what an attractive type of architecture has been developed. The plan, too, has been exceedingly well handled, showing careful study.

Willis Polk's talent had a very great influence on the architecture of California. He was a leader in some of the more far reaching movements. He always fought for high standards and artistic ideals and



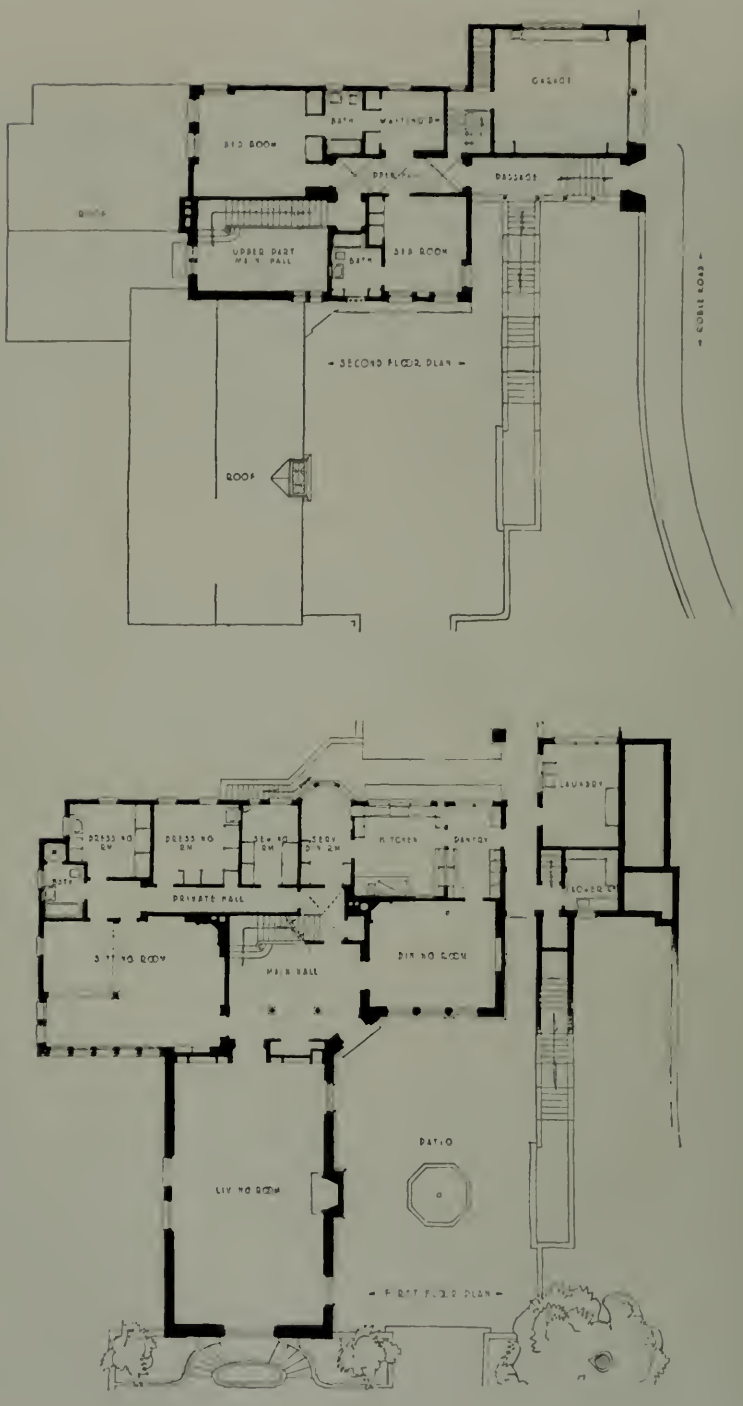
MODEL, RESIDENCE OF DUNCAN McDUFFIE, CLAREMONT
Willis Polk and Company, Architects

applied them with rare skill to his own work. It is therefore a great satisfaction to his admirers and art lovers to feel that his office is being skillfully and faithfully carried on.

The work of Messrs. Mitchell and Moore although it is a continuation of the work of Willis Polk, is marked by the very positive artistic talent and personal taste of the younger men and has developed into, not merely a continuation of the old office, but the formation of a new individuality and a fresh point of view.

RESIDENCE OF DUNCAN McDUFFIE, CLAREMONT
WILLIS POLK AND COMPANY, ARCHITECTS

RESIDENCE OF DUNCAN McDUFFIE, CLAREMONT
WILLIS POLK AND COMPANY, ARCHITECTS



PLANS, RESIDENCE OF DUNCAN McDUFFIE, CLAREMONT
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GARDEN COURT, RESIDENCE OF DUNCAN McDUFFIE, CLAREMONT
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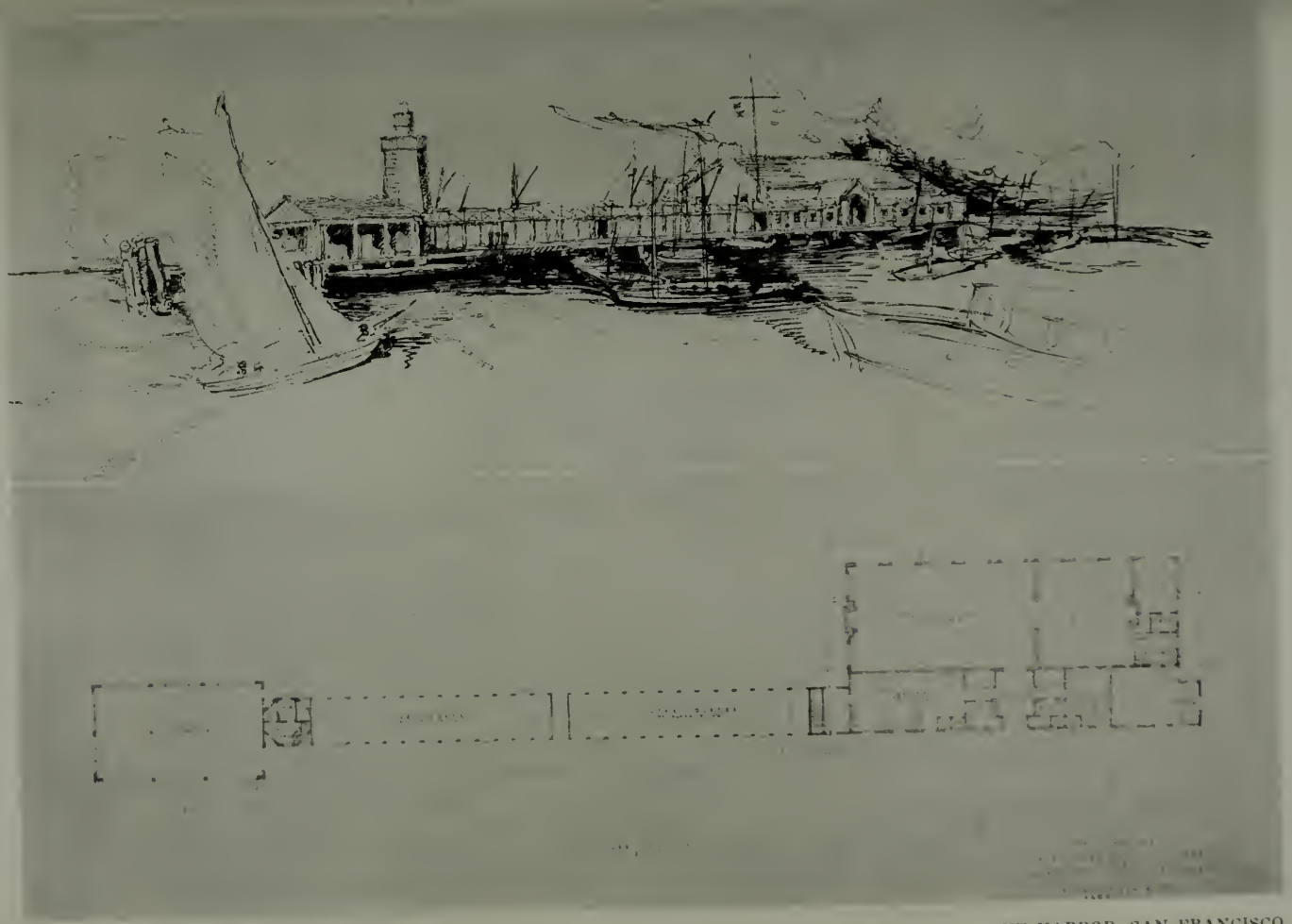

CLUBHOUSE AT MARINA YACHT HARBOR, SAN FRANCISCO
WILLIS POLK AND COMPANY, ARCHITECTS

LIVING ROOM BAY, RESIDENCE OF J. B. METCALF, PIEDMONT
WILLIS POLK AND COMPANY, ARCHITECTS

ENTRANCE PORCH, RESIDENCE OF J. B. METCALF, PIEDMONT
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RESIDENCE OF J. B. METCALF, PIEDMONT
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GARDEN VIEW, RESIDENCE OF B. W. FORD, HILLSBOROUGH
WILLIS POLK AND COMPANY,
ARCHITECTS

LIVING ROOM, RESIDENCE OF B. W. FORD, HILLSBOROUGH
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HALL, RESIDENCE OF STANLEY G. HARRIS, SAN FRANCISCO
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LIBRARY, RESIDENCE OF STANLEY G. HARRIS, SAN FRANCISCO
WILLIS POLK AND COMPANY, ARCHITECTS

ENTRANCE TO GALLERY, RESIDENCE OF STANLEY G. HARRIS, SAN FRANCISCO, CALIFORNIA
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MARINE VIEW APARTMENTS, SAN FRANCISCO
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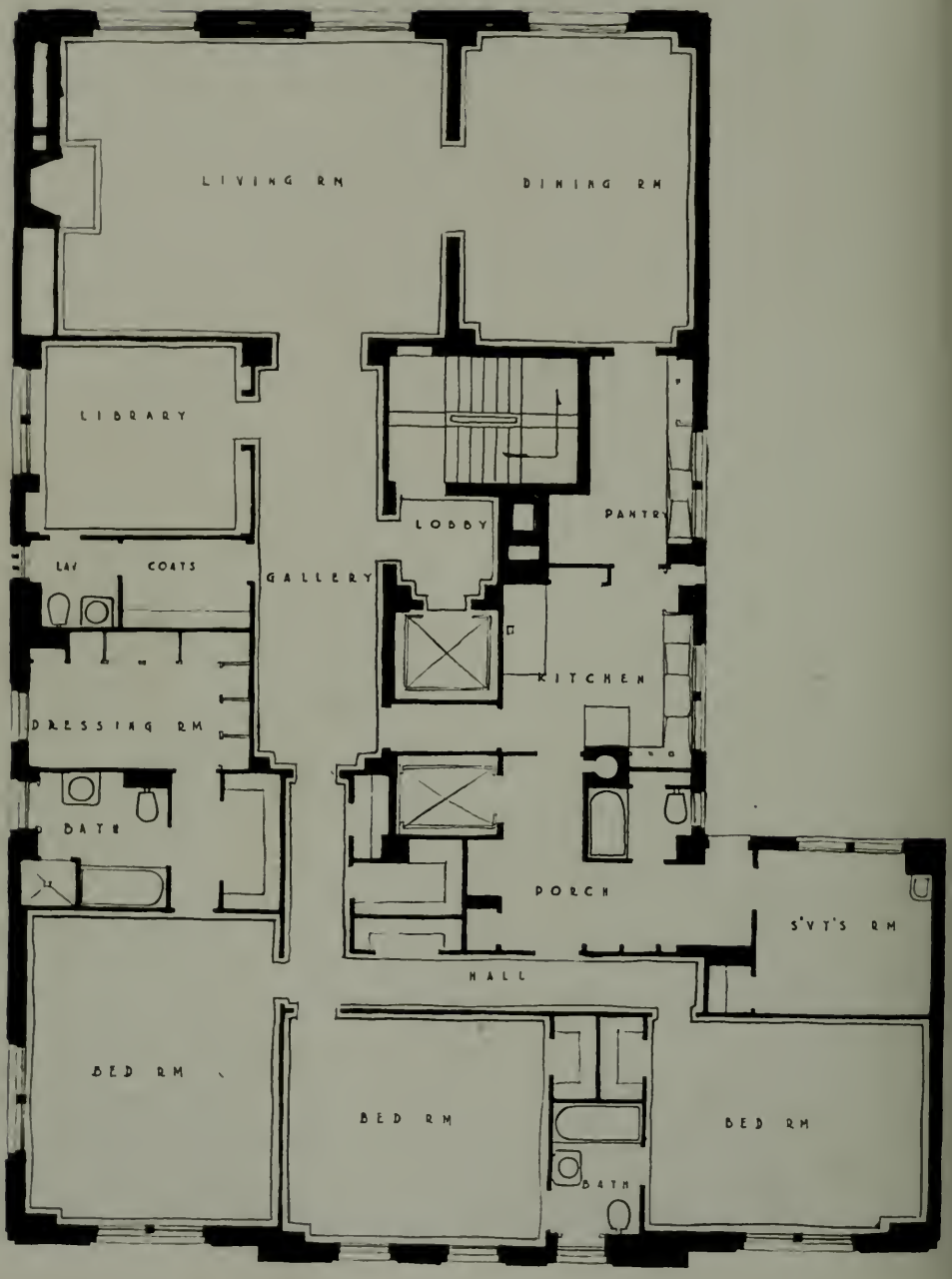
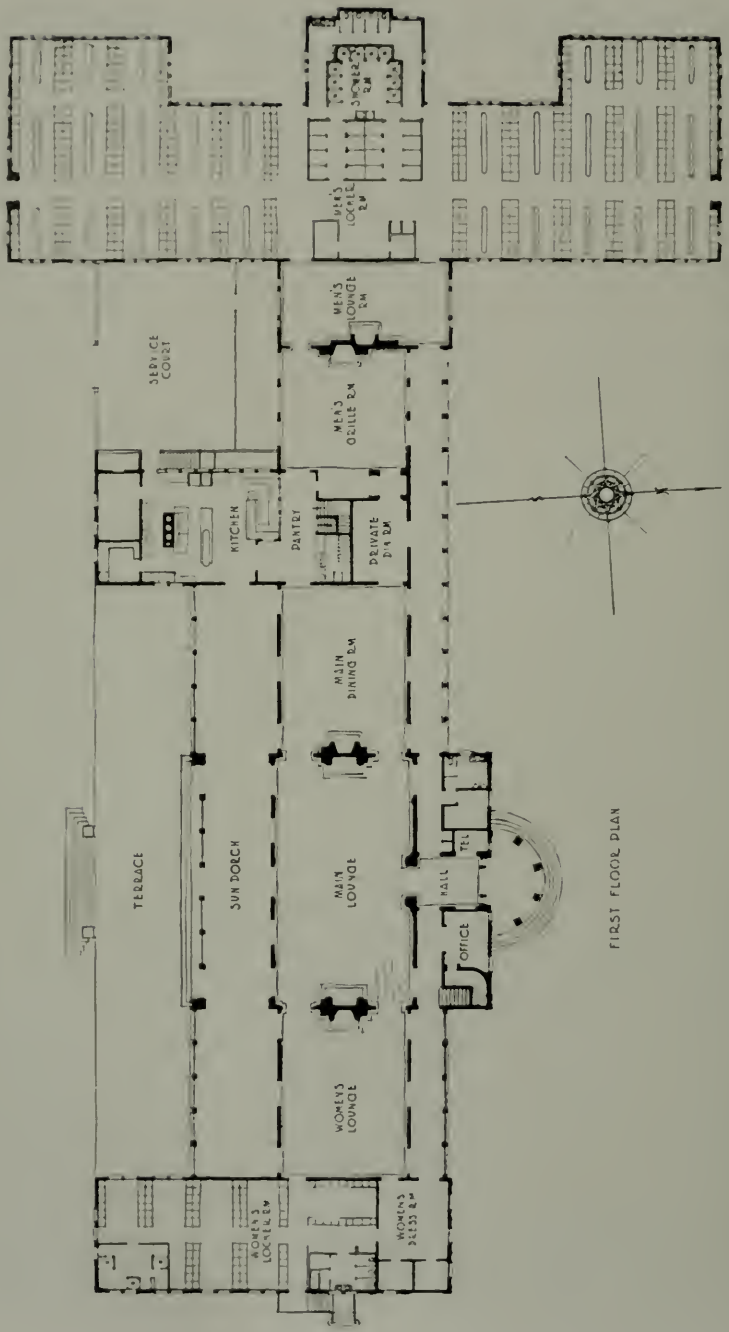


TYPICAL FLOOR PLAN, MARINE VIEW APARTMENTS, SAN FRANCISCO
WILLIS POLK AND COMPANY, ARCHITECTS

CALIFORNIA GOLF CLUB, SAN MATEO COUNTY, CALIFORNIA
WILLIS POLK AND COMPANY, ARCHITECTS



PLAN, CALIFORNIA GOLF CLUB, SAN MATEO COUNTY
WILLIS POLK AND COMPANY, ARCHITECTS

MEN'S LOUNGE ROOM, CALIFORNIA GOLF CLUB, SAN MATEO COUNTY
WILLIS POLK AND COMPANY, ARCHITECTS

PORCH, CALIFORNIA GOLF CLUB, SAN MATEO COUNTY
WILLIS POLK AND COMPANY, ARCHITECTS

ENTRANCE HALL, CALIFORNIA GOLF CLUB
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ENTRANCE DOOR, CALIFORNIA GOLF CLUB
WILLIS POLK AND COMPANY, ARCHITECTS

GAS STATION, CALIFORNIA PETROLEUM COMPANY, SAN FRANCISCO
WILLIS POLK AND COMPANY ARCHITECTS

PUBLIC LIBRARY BUILDING, LOS ANGELES
BERTRAM G. GOODHUE, ARCHITECT
CARLETON M. WINSLOW, ASSOCIATE

The NEW PUBLIC LIBRARY LOS ANGELES

By

Faith Holmes Hyers.

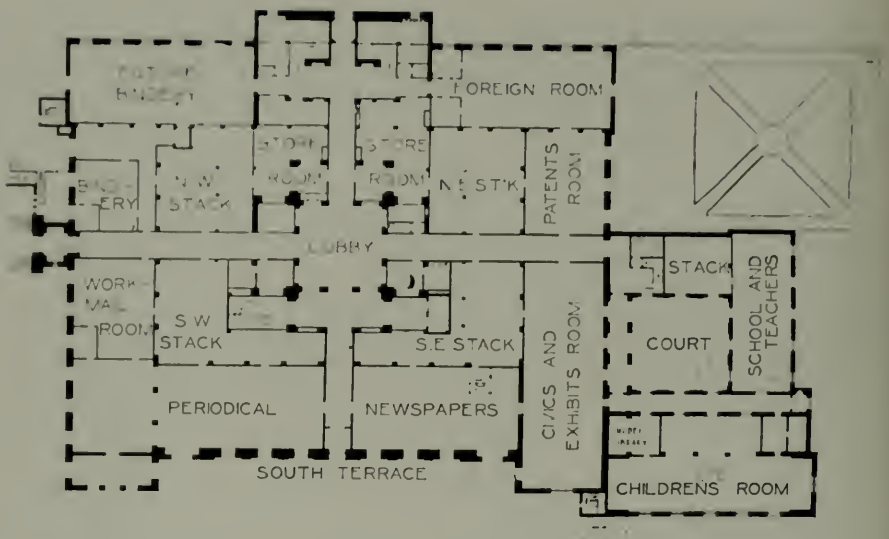
THE new Public Library of Los Angeles, the last great design of the late Bertram Grosvenor Goodhue, carried to completion by his associate, Carleton Monroe Winslow, is attracting wide spread attention both as a library remarkably planned, and as an example of a departure in architecture, an adaptation of modern materials and lines of concrete construction to laws of harmony and artistry.

Following no particular school, creative rather than traditional, it suggests many styles. Massive, beautifully proportioned, plain almost to the point of severity, expressing interior requirements in lines of exterior symmetry and climax, it presents a study in mass and proportion in use of cubes, prisms, rectangular lines, as well as a never ending satisfaction in the exquisite details of grills, gates, lighting fixtures, bronze and tile work.

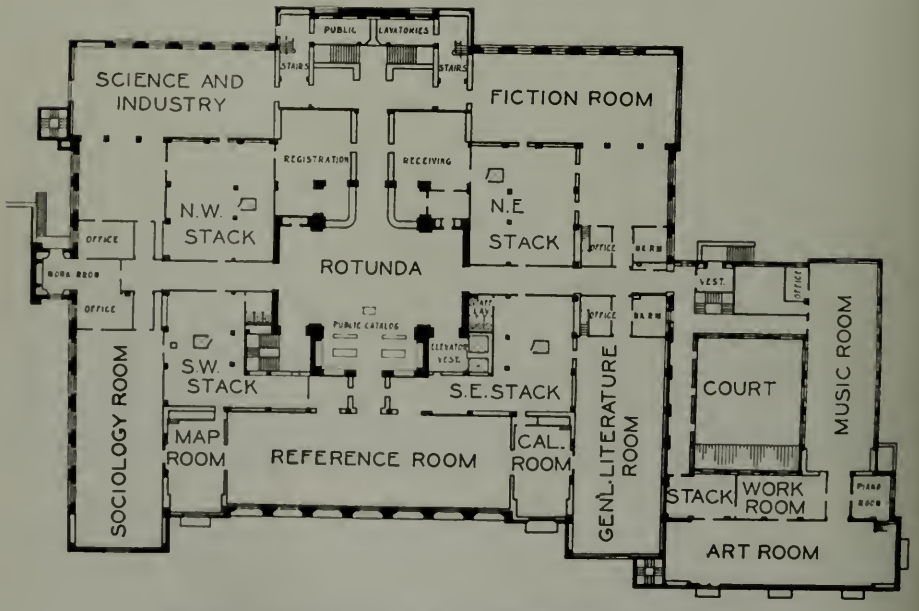
Occupying a site covering two city blocks, half way up a hill, it presented many problems. Fronting on three streets, with a fourth terminating at the axis of the building, it offered opportunities of beautiful entrances and landscaped approaches which have been ably appropriated. The great plain walls, broken by rectangular window openings, are relieved by sculptural decoration at every entrance. Inviting walks, lawns, shrubs, trees of a classic character, tiled pools, ornamental lights and stone seats form park-like approaches on two sides of the building.

The structure consists of a three-story main building with dimensions 200 x 239 feet, a two-story wing 89 x 129 feet, and a central square tower rising 188 feet. The exterior is surfaced with a hard smooth stucco, toning in with the Indiana limestone incorporated at entrances and tower for the sculptural decorations. The interior walls of the main rooms are left as stripped from the forms and the painted decorations of the ceilings are placed directly on the concrete beams. Honesty, simplicity, "revealed construction" characterize the building within and without. The central feature is the great square tower, forming on the exterior, the climax of square lines, lifting and unifying the spreading building, crowned with a pyramidal apex treated in tiles in the Spanish manner, and tipped with a golden torch held aloft in a human hand.

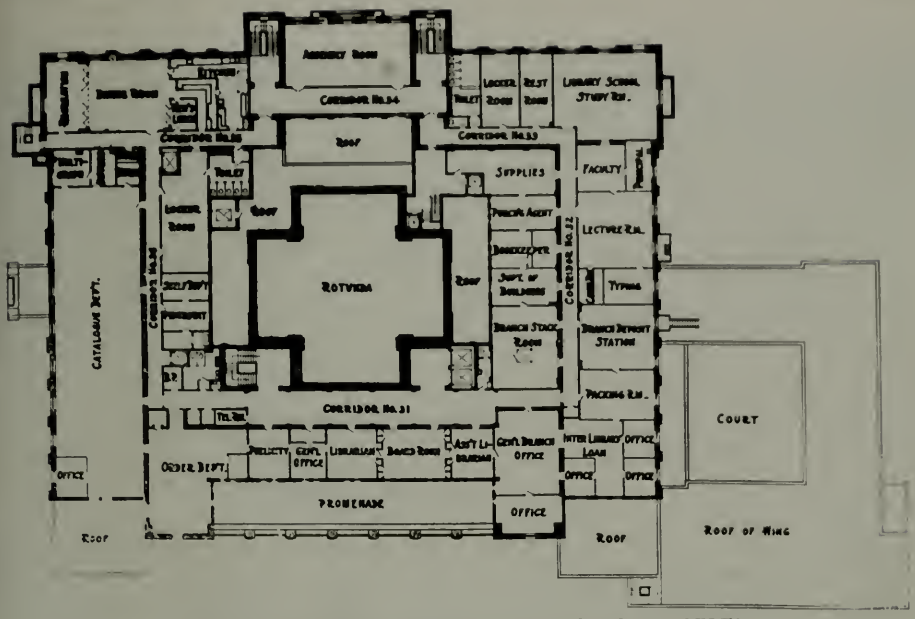
Within, this tower roofs the great central rotunda, the hub of library activities and chief decorative feature. The dome is supported by arches which spring from the four immense concrete columns at the corners of the rotunda, dividing the opening into the shape of a Maltese cross. Rising 64 feet above the floor with a 42-foot span this



FIRST FLOOR PLAN, PUBLIC LIBRARY, LOS ANGELES
Bertram G. Goodhue, Architect, Carleton M. Winslow, Associate



SECOND FLOOR PLAN, PUBLIC LIBRARY, LOS ANGELES
Bertram G. Goodhue, Architect, Carleton M. Winslow, Associate



THIRD FLOOR PLAN, PUBLIC LIBRARY, LOS ANGELES
Bertram G. Goodhue, Architect, Carleton M. Winslow, Associate

DETAIL OF HOPE STREET FACADE, SHOWING FIGURES GROWING OUT OF PIERS
Sculpture by Lee Lawrie

ROTUNDA, MAIN FLOOR, PUBLIC LIBRARY BUILDING, LOS ANGELES
BERTRAM G. GOODHUE, ARCHITECT; C. M. WINSLOW, ASSOCIATE

REFERENCE ROOM, PUBLIC LIBRARY BUILDING, LOS ANGELES
BERTRAM G. GOODHUE, ARCHITECT; C. M. WINSLOW, ASSOCIATE

dome gave the painter an opportunity for color and design accentuating the noble architectural effect and drawing the eye upward. Below the dome hangs a chandelier containing 68 lights, representing the globe of the earth in a circle containing the signs of the zodiac, the whole hanging from chains centering in a twenty-four pointed sun.

The general plan of the building suggested by the Librarian, Mr. Everett R. Perry, and the Library Board, after much consideration of library planning, places all public reading rooms on the exterior areas of the building utilizing light and air to the best possible advantage. This plan, together with the necessity of many entrances, required a central opening on the first two floors which is accomplished by corridors dividing the building on its axes, and converging in a first floor lobby and a second floor rotunda. The third floor is devoted to administrative and executive quarters and departments which do not deal directly with the public.

Referring to Goodhue's developing thought from use of intricate design to simple lines, and the abandonment of traditional style for expression of construction, C. Howard Walker has said: "At length Goodhue stated frankly that he felt architectural expression reached its height in finely proportioned solids and surfaces, devoid of all detail excepting that of noble sculpture."

In Goodhue's own words we have this explanation of his ideal: "I should like to be merely one of three people to produce a building, i.e., architect, sculptor, painter. I should like to do the plan and the massing of the building; then I should like to turn the ornament to a perfectly qualified sculptor, and the color and surface direction to an equally qualified painter—the 'designing triumvirate'."

Los Angeles has been peculiarly fortunate in the "designing triumvirate" for the public library. Mr. Goodhue's death in 1924 left the entire construction and completion of many details to the care of Carleton M. Winslow, himself an authority on California architecture and a sympathetic admirer of Goodhue's work. Mr. Winslow and the Goodhue associates became the successors to the architectural contract. Lee Lawrie, the sculptor who has worked with Goodhue since they were young men together in New York, and who with the architect has worked out a kind of architectural sculpture which is not ornate or applied, but is an integral and structural part of the building, is creating the beautiful models of litterateurs and sages and the symbolic figures which express the purpose of the library. Inscriptions and plan of sculpture were worked out by Dr. Hartley Burr Alexander of Nebraska, who performed this same service for Goodhue in the Nebraska Capitol building. Interior decorating was contracted by Julian E. Garnsey, mural painter of Los Angeles. This "triumvirate" have indeed preserved the Goodhue ideal.

MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
Atlee B. Ayres, Robert M. Ayres, George Willis and Emmett T. Jackson, Architects

A MUNICIPAL AUDITORIUM

San Antonio's Tribute to the War Dead

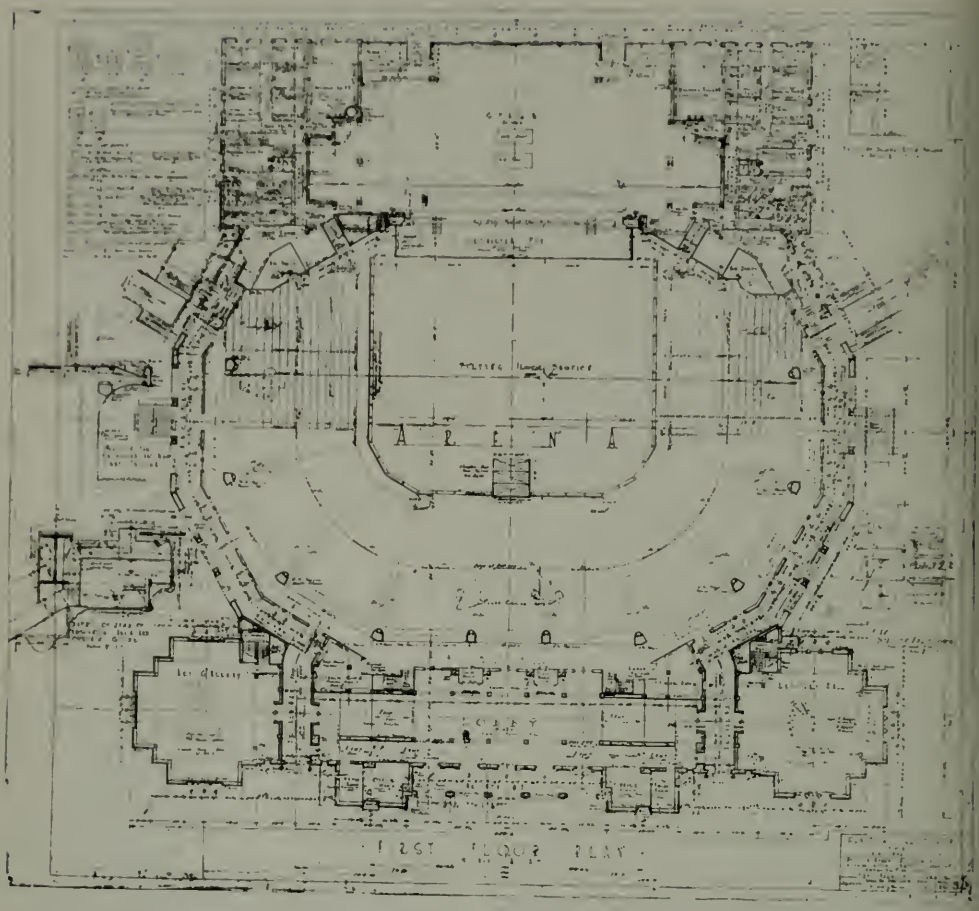
By Matthew Paxton.

IN planning its memorial to the war dead, San Antonio desired that its tribute should fill a need of the living. Hence, the Municipal Auditorium. It stands in the heart of the city on a five-acre parking beside the San Antonio river, which winds its way through the business district with green banks at all seasons.

The design is a combination of Spanish and Italian, yet its five domes suggests the Byzantine. Mexican polychrome glazed tiles have been used with discernment in the domes that cap the two towers, and on the domes of the one-story wings which flank the front facade in a curious but satisfying way. Terra cotta tile is used between the two towers. The main roof is of metal.

MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
ATLEE B. AYRES, ROBERT M. AYRES, GEORGE
WILLIS AND EMMETT T. JACKSON, ARCHITECTS

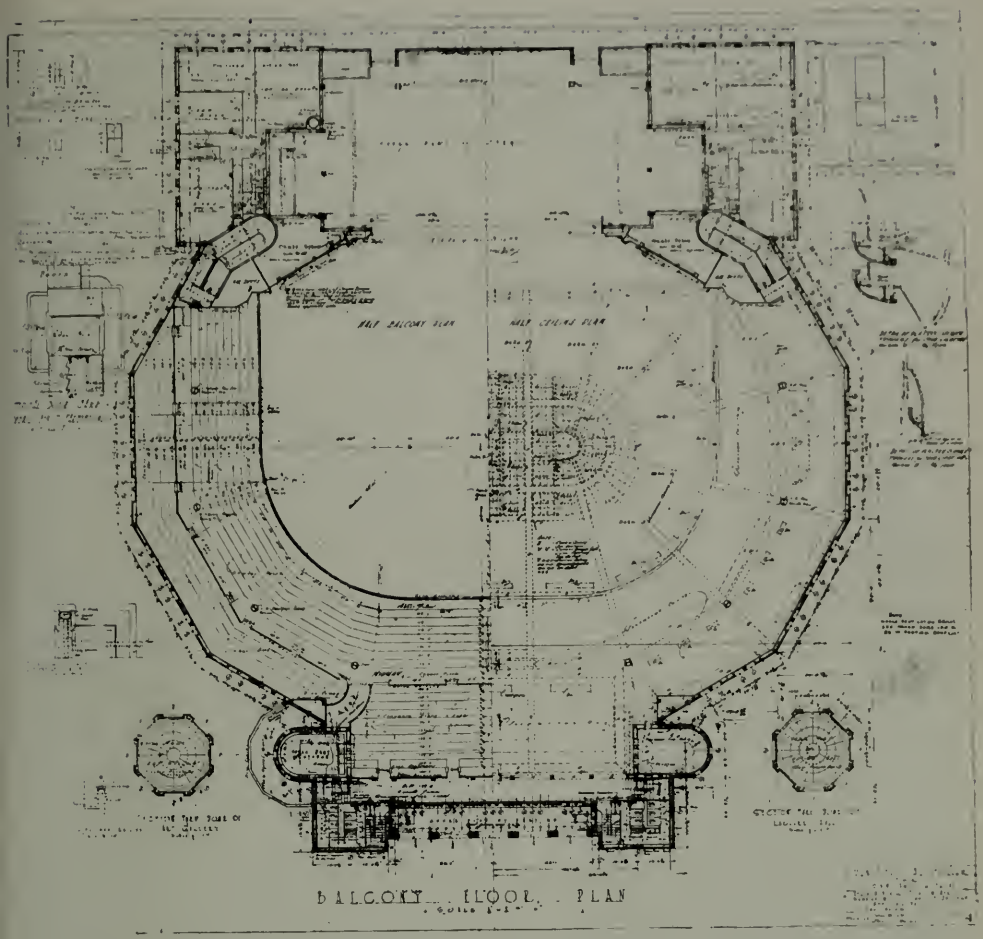
MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
ATLEE B. AYRES, ROBERT M. AYRES, GEORGE WILLIS AND EMMETT T. JACKSON, ARCHITECTS



FIRST FLOOR PLAN, MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
Atlee B. Ayres, Robert M. Ayres, George Willis and Emmett T. Jackson, Associate Architects

Outside walls are of Bedford limestone with a smooth finish. The structural frame is of reinforced concrete and steel. Large steel trusses support the main roof above the auditorium and make a clear span in the widest part of about two hundred and fifty feet. No columns have been used in the auditorium proper.

The auditorium seats from six to seven thousand persons. The stage is fifty-five feet deep and more than a hundred feet wide, the proscenium arch being seventy-five feet wide and forty-five feet high. In order that San Antonio may have grand opera, the stage loft has been made high enough to take care of the large scenes used by such companies. Six small dressing rooms and a large one on either side of the stage have been built. They are furnished with showers and toilets.



BALCONY FLOOR PLAN, MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
Atlee B. Ayres, Robert M. Ayres, George Willis and Emmett T. Jackson, Associate Architects

Just in front of the stage is floor space that can be leveled for dancing purposes. It measures eighty by ninety feet, and is equipped with movable chairs.

The interior of the auditorium presents a striking difference from most interiors of that type. Virtually all others are rectangular. The San Antonio auditorium forms an oval, the stage being on the narrow side of the oval. The ceiling is of the same shape. It is thought that this form provides better acoustics. At any rate it places the audience at a more nearly uniform distance from the stage than was possible in a rectangular auditorium.

That the acoustics may be faultless the ceiling of the auditorium has been treated with sugar cane, ground to a pulp, which is applied in

MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
ATLEE B. AYRES, ROBERT M. AYRES, GEORGE WILLIS AND EMMETT T. JACKSON, ARCHITECTS

MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
ATLEE B. AYRES, ROBERT M. AYRES, GEORGE WILLIS AND EMMETT T. JACKSON, ARCHITECTS

INTERIOR, MUNICIPAL AUDITORIUM, SAN ANTONIO, TEXAS
ATLEE B. AYRES, ROBERT M. AYRES, GEORGE WILLIS AND
EMMETT T. JACKSON,
ARCHITECTS

12 x 12 squares about half an inch thick. This substance absorbs vagrant sounds. Uniform cool air in summer and heat in winter are guaranteed by the ventilating system that has been installed.

The main entrance leads through a five arched loggia into a large lobby. On either side of the building are four double doors, which, with the three front entrances to the auditorium, allow it to be emptied in a few minutes.

A mezzanine floor over the front entrance lobby is reached by ramps. The balcony also is reached by ramps, of which two are in front and two toward the rear of the building. Stairways lead from the first floor to the basement, where are the main retiring rooms for men and women, the kitchen and a space for exhibition purposes. This exhibition space is connected with the main floor by ramps as well as by a broad stairway. Thus, the central space on the first floor may be used in conjunction with the basement, in which three hundred cars may be parked.

The floor of the lobby and the inclines to the balcony are of terrazzo. The floor of the tilting section, just in front of the stage, is maple. All other floors are cement.

The interior is illuminated by concealed lights around the face of the main dome, and by others, which are distributed over the sky light in the center. The front facade may be illuminated by turning on specially arranged lights.

A pipe organ of superior make has been installed with organ chambers on either side of the proscenium arch. Provision also has been made for motion pictures. The drop curtain depicts the coming of the early Spaniards in 1718 to San Antonio, and a conference that was held with the Indians.

One of the two one-story wings leading from the lobby will be used as a lecture hall, the other as a reception room. The executive staff will occupy two offices opening into the lobby, the two ticket offices being opposite the main entrance. There are four committee rooms above the dressing rooms. The hotel ground area of the building is 259 by 261 feet.

The cost of the Municipal Auditorium has been a million and a half dollars, which was obtained by three bond issues and by money appropriated from the municipal general fund. The cost of the furnishings is two hundred thousand dollars.

The building was dedicated early in September and is in general use, although minor details are yet to be finished.

The architects are Atlee B. Ayres, Robert M. Ayres, George Willis and Emmett T. Jackson, all of San Antonio.

PARMELEE-DOHRMANN BUILDING, LOS ANGELES
ASHLEY AND EVERS, ARCHITECTS

ARCHITECTURE - EAST and WEST

Being a Few Notes By Ye Editor - Serious and Frivolous - mostly Frivolous

THREE weeks travel through the principal cities of the East have convinced me that the Pacific Coast is very close to the front line in the world's march towards good architecture. Give our California, Oregon and Washington architects the same opportunities that have been given the profession in other parts of the United States, and the results will be equalized. True, we have no classic pile to compare with the Lincoln Memorial in Washington, nor have we an office building that even conjures to our mind a suggestion of that awe-inspiring Woolworth building in New York City. But if you measure the Western man's opportunities with those that have come to our Eastern brethren, there need be no hesitancy in saying that Pacific Coast architecture is as good as any developed east of the Rocky mountains. Personally, I think we have put it over on some of the Eastern men. Unquestionably we are doing great things here.

Of the new buildings in Chicago, the Tribune Tower stands out as the best thing in commercial architecture that has been done there in recent years. The architects, Messrs. Howells & Hood, it will be recalled, were selected in a competition in which two San Francisco firms received honorable mention. While the general effect of the Tribune building is that of a great tower, in reality the structure is not a tower. It is all one building. It climbs into the air just naturally. There are two other buildings in the world which suggest in general mass and design the Tribune Tower, but which have no relation to it either in their use or size. These buildings are the famous Butter Tower in Rouen and the Tower of Malines in Belgium. Both are Gothic towers attached to cathedrals, and, of course, have no modern practical use like the Tribune Tower, which is first of all a practical modern office building. It is a forty-story stone skyscraper, square in plan and isolated on all sides.

In commenting on the design, Mr. Howells said: "It is an axiom in architecture that any important skyscraper in our American cities must be designed with an interesting and decorative lower part or base, which can be seen from the sidewalk; and also an interesting and decorative top high in the air against the sky. All the middle part of the building, between the base and the top, can be made up of plain stone surfaces. These principles are also applied in the design of the Tribune Tower, and their explanation is obvious. In our crowded American cities one can see the few lower stories from the street, and these must be interesting. One can see the top against the sky from other office windows or from a considerable distance, and this top must also have a dignified, and if possible, beautiful silhouette. So the Tribune Tower becomes the typical and ideal problem in design of that kind of tall building called the skyscraper."

There is no newspaper building on the Coast or anywhere else in the United States that we know of, that may be compared with the Tribune Tower. The San Francisco Chronicle and the Portland Oregonian each have substantial structures that for adaptability to modern demands are comparable with the New York Tribune and Detroit News buildings.

In theatres, New York has all too many old ones, with some new ones no better in design than our own. The Oriental theatre in Chicago is better than the average. The Egyptian theatre in Hollywood, the Metropolitan in Los Angeles, the Fox theatre (now the Orpheum) in Oakland and the Senator in Sacramento are all comparable with any of the medium size new playhouses in the large Eastern cities. Mr. Lansburgh has an Orpheum theatre in New Orleans that is as good as anything he has done in California. It is a fine tribute to California products, by the way, to be able to chronicle the fact that the beautiful polychrome terra cotta which covers the entire front of this building is a product of the Pacific Coast.

While on the subject of color I noticed they are using more and more of it for architectural embellishment and a Chicago architect told me he is about to apply for patents on a process by which he expects to enamel one side of a common brick any color desired and market it for little more than the cost of common brick and considerably less than face brick. The idea sounds plausible.

Stucco houses are not much in evidence after you have passed out of the Western atmosphere, and strange to say, when you do see them they look out of place. I saw a terrible attempt at a Spanish bungalow court in New Orleans—distorted lines, ugly color and an abominable tile roof. In Boston there are a few plaster houses, but as I said before, they don't seem to fit into the landscape. A word about Cambridge, Massachusetts. Some fine old Colonial houses here and Harvard University is fast being transformed from old dilapidated buildings to modern structures with the English and Colonial feeling throughout.

While on the subject of Colonial architecture, the East seems to be as much "fed up" on it as California is with Spanish. Colonial everywhere. All the additions to the Metropolitan Museum in New York City, designed by McKim, Mead & White are Colonial in keeping with the original building. My enthusiasm is unbounded for this inspiring work.

All of the big Eastern cities have fine union depots. The LaSalle in Chicago, the Broad Street in Philadelphia, the Pennsylvania and the Grand Central Terminal in New York City are wonderfully designed structures with great care shown in their arrangement for the public's convenience. The decorations of the Grand Central Station are superb.

* * * *

New York seems to be going mad over the step-back building. There is really nothing new about this type of structure except its recent popularity. The Indians built their pueblos in this fashion. I failed to see one that was any more imposing than our own telephone building by Messrs. Miller & Pflueger and A. A. Cantin. The fact that the City of New York has established some rigid height limitations for office buildings on narrow streets, is responsible for the present popularity of step-back buildings in that city.

Three other telephone buildings have been built recently in the East along lines similar to the San Francisco structure. There is one in St. Louis larger but not nearly so imposing. It is the home office of the Southwestern Bell Telephone system. Then there is the Barclay-Vesey building in New York City and the Ohio Bell Telephone building in Cleveland, Ohio. All three are step-back designs and range in height from 21 to 30 stories.

Fifth avenue, New York, is fast losing its palatial mansions that one time filled millionaire's row. The homes are giving way to twelve-story community apartment houses not unlike the ones we are building

today in San Francisco. It is a sad commentary that many owners of these fine old places are not going to build elsewhere—they are moving into apartments so they may be as little inconvenienced as possible when absenting themselves from the city. It is estimated the wealthy class are traveling abroad or are at their country and seaside estates nine months of the year. So why build a city home?

Of the unique buildings in New York none appealed to me more than the American Radiator Company's new home — a twenty-story structure faced with black brick and gold leaf trimmings. The design is well proportioned and there is a fascinating atmosphere about this tower-like structure silhouetted against the sky, that draws one to it and invites a second look. I wish we might have something like it on the Pacific Coast.

One cannot see where any of the Eastern hotels are so far superior to those in San Francisco, Los Angeles, Portland and Seattle. There may be some larger hostelries in the big Eastern cities, but none are better equipped or more competently managed. In fact some of the Eastern structures are a real disappointment. Architecturally the large hotels are more or less stereotyped with perhaps some interiors more elaborately embellished than others.

Eastern building circles are becoming more or less worked up over alleged abuses in both the construction and the financing of new buildings. These harmful practices are held responsible for a let-down in building activity, particularly in New York City, which has of late become marked enough to call for explanation. Some of them are of the more or less familiar type, including needlessly expensive trade union rules and plain "soldiering on the job." As to the last-mentioned obstacles to economy in building the prediction is freely made that employment conditions will shortly work an automatic cure through the elimination of all but the efficient and industrious workers. On the financial side, the rather startling statement is made on apparently good authority that some building loans are made not only beyond a conservative proportion of cost, but actually in excess of actual building costs. Signing of receipts by subcontractors in excess of amounts actually paid them has been practiced to such an extent as to call forth vigorous warnings from officers of building trades associations to their members and a demand that the practice cease. This method of assisting the owner or general contractor to obtain installments of the loan is, of course, not necessarily fraudulent in intent, but its critics declare that it is so in form and is susceptible of no end of abuse. Obviously, it is the sort of thing that only the "shoestring" operator would do.

In New Orleans I noticed the architects are signing their work and why not more of this sort of thing in San Francisco? The Masonic Temple office building just completed in New Orleans — a pleasing straight line mass of grey stone rising 18 stories—has on its corner plate the names of the Masonic Building Committee and the architects and builder. The architects are Samuel Stone, Jr., Grover C. Stone and Sam Payne Stone. The corner stone of other recent buildings in the Louisiana capital are similarly inscribed, including the Cotton Exchange by Favrot & Livaudais, Ltd. The design for the new hotel which the Bank of Italy is planning to finance at the gore of Hayes, Larkin and Market streets, San Francisco, reminds one of several office structures in Chicago and New Orleans. Atop the proposed San Francisco hotel will be what Charles Peter Weeks has described as a replica of our city hall. With the same display of classic columns the roofs of the Wrigley

and Board of Trade buildings in Chicago, and the Hibernian Bank & Trust building in New Orleans, are crowned with miniature temples. They remind one of Willis Polk's water temple at Sunol. Frankly, I cannot see the sense of such elaborate stunts for our sky lines. And speaking of sky lines, do you know of any city with the possible exception of New York, that lays claim to a sky line more fascinating than our own San Francisco as viewed from an incoming ferry boat?

* * * *

I have seen Mr. Hobart's sketches of the new Grace Cathedral in San Francisco. If the design is carried out we shall have a cathedral that for beauty and spaciousness will equal Saint Thomas' church in New York and will be longer by one hundred feet and even more impressive than the New York edifice.

Of the Eastern cities there is none more appealing than Washington. Its numerous parks, wide streets, wires underground and splendid public buildings, all contribute towards making our Capitol City supremely ideal. The Pan-American building in the National Capitol grounds is a point of interest. It was designed by two Philadelphia architects, Messrs. Kelsey & Crèt, who also planned the Sesqui-Centennial buildings in Philadelphia. This Exposition, let me state, is worth one's while to visit, but it cannot be compared with our 1915 Exposition, either for size or beauty.

Some of the buildings have never been finished. The Tower of Lights is in its skeleton form. The exhibits are not to be classed with those in the San Francisco Exposition. Philadelphia deserves a lot of sympathy for it seems that about everything that could go wrong has traveled that way for the fair. Whenever a big gathering was scheduled the rain would dampen the ardor of the visitors, keeping them away from the Exposition grounds and consequently diminishing the receipts.

To return to the Pan-American building, mention should be made of the peace conference hall off the Spanish patio on the second floor of the building. Designed in pure classic one is fairly captivated by the beauty of its detail.

Of the pleasant memories of this all too short a trip, probably none will linger more vividly than our visit to the Arlington National Cemetery, overlooking the lazy Potomac on the Virginia shore, where sleep the heroes of all ranks and of all wars from the Revolution to the last world conflict, and just beyond the cemetery, the "Tomb of the Unknown" of the Civil War. Here stands the impressive Memorial Amphitheatre, designed by Messrs. Carrere & Hastings, built of pure white marble, classic and chaste as a lily, an everlasting tribute to our soldier dead.

While touching upon a few of the beautiful things to be seen in Washington, I want to relate an incident that happened while our party was going through the National Capitol, for maybe some good will come of it. We had reached the Hall of Fame partly filled with statues of notable statesmen. (Each state, as our guide explained, is entitled to floor space for two statues.)

"Now, if you will call your state I will point out your statue," said the guide.

"California," I sung out and at the same time looked to see him point. Imagine my astonishment, when he said:

"California? Never heard of it. Where is it?" Then with a twinkle in his eye: "Why don't you fellows get busy? Haven't you

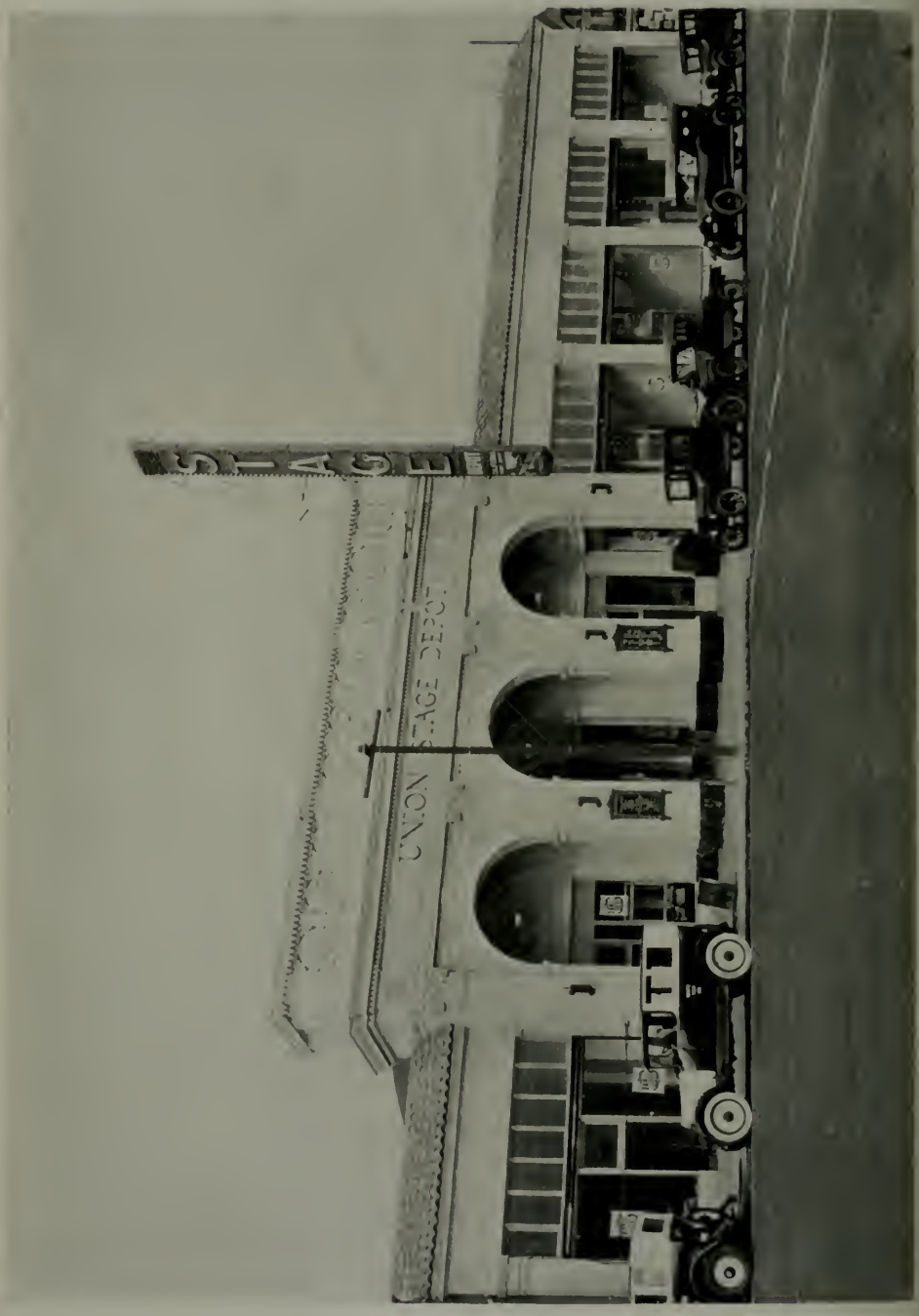
had any great men out there since the Forty-Niners? I know there are some Californians living who deserve to be here but you know they must be dead first."

"Dead," I interrupted, "we have no dead ones in California!"

But all joking aside, California should be represented in that Hall of Fame. And one of the two statues we are entitled to should be of Luther Burbank.

In no city was I able to find a Civic Center comparable with the one we have under development in San Francisco. I do not think we begin to appreciate what we have here. The City Hall, the Auditorium, the Library and the State building—all are types of the world's best architecture and may be compared with any similar civic building anywhere in the country. Springfield, Massachusetts, has an interesting municipal group, but it is surrounded by a lot of ugly structures that defeat the efforts of the architects to create a thing of beauty—and so it is in many other cities where it would seem all too little attention has been paid to environment and forethought in planning for future development. Surely here is a prolific field for our City Planning experts.—F. W. J.

PEN-AND-INK SKETCH BY ROGER BLAINE



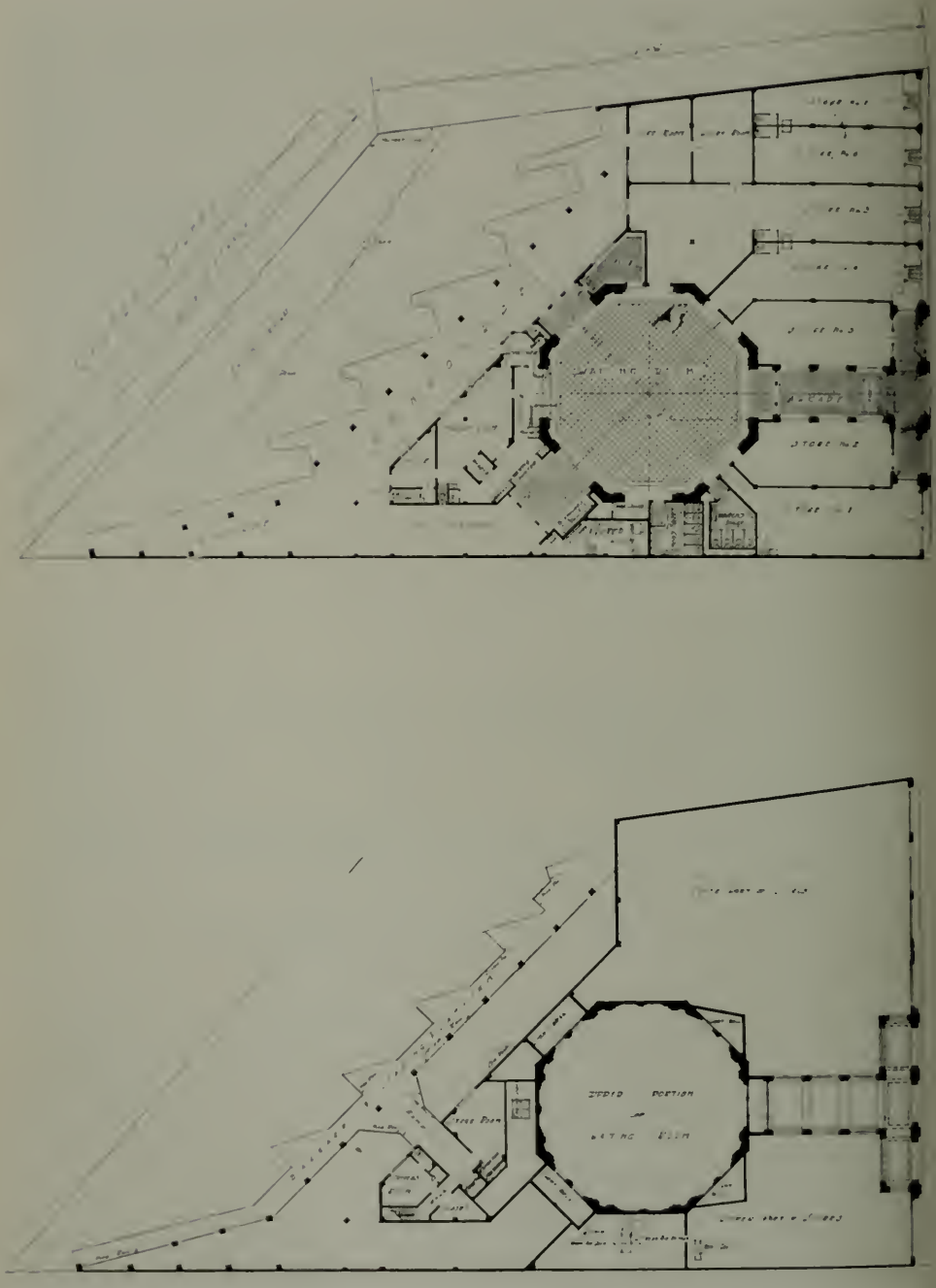
UNION STAGE DEPOT, OAKLAND, CALIFORNIA
SWARTZ AND RYLAND, ARCHITECTS

LOADING PLATFORM, AUTO STAGE DEPOT, OAKLAND
Swartz and Ryland, Architects

A UNION DEPOT *for* The CALIFORNIA TRANSIT CO.

Swartz & Ryland, Architects.

THE design of this Union Stage Depot on a very irregular shaped lot, called for numerous preliminary sketches, due in a measure to the fact that the automobile stage is still in its infancy and plans for future expansion had to be made with comparatively little information that would benefit us in our calculations for future expansion. In arrangement of plan you will find, after entering the waiting room, that no one is permitted to pass beyond the public space provided for them. The passengers entering find the ticket office directly ahead with the baggage checking department to the left. The baggage, when received, is drawn upon a rubber tired cart, which is taken to a mezzanine floor by hydro-electric elevators, and from there to the loading platform at the level of the top of the stages. The latter, entering the building from Castro street, unload the passengers who have Oakland as a destination, and in the main waiting room they find their baggage awaiting



PLANS, UNION STAGE DEPOT, OAKLAND
Swartz and Ryland, Architects

OCTAGON CEILING, UNION STAGE DEPOT, OAKLAND
SWARTZ AND RYLAND, ARCHITECTS

WAITING ROOM, UNION STAGE DEPOT, OAKLAND
SWARTZ AND RYLAND, ARCHITECTS

them, it having been transfered from the top of the stage to the counter in the waiting room. The telephone booths are close by, making it convenient for passengers to phone their friends and relatives upon arrival. The stage, after unloading, proceeds to a loading slip, and when ready to receive passengers the dispatcher opens the outgoing passenger doors, announces the destination of the busses and takes the travelers' tickets. This system eliminates all confusion of the incoming or out-going passengers, also any liability of loss of baggage or personal property entrusted to the company. The scheme is entirely new, according to Mr. Travis, president of the company, who declares it is 100 per cent perfect.

The waiting room is 56 feet across in an octagonal shape and has four 20-foot double benches, seating approximately 100 people. Even though the traffic through this waiting room varies from 1500 to 3000 people per day, it never seems congested, due to the rapidity of the turnover. The front of the building, which is 135 feet long, is built of precast stone of a beautiful travertine color. The detail is in the Renaissance style. The frieze, capitals, etc., are molded with deep reveals. The parapet wall is perforated in its detail, and contains a 24-inch electric clock in the center. On the two main pilasters are bronze bulletin boards. The entrance doors and frames are in bronze and plate glass. All the floors used by the public are of Columbia marble with the border worked out in Tennessee and Verde-antique. The wainscoting of the waiting room is built up with a blue-belge base and a pink Tennessee die to a height of five feet to the molded cap. The balance of the wall surface to the spring of the dome, including the ribs of the latter and the central motifs, are of imitation travertine marble, richly carved. The dome rises 38 feet above the floor. Panels between the ribs are acoustically treated. The main waiting room is lighted in the day-time by four pairs of arched windows with light amber glass. The artificial lighting is done with concealed lights behind the cornice. The colors in the room are warm and the openings of the eight bays are framed and linteled with bronze metal work of beautiful detail. The air in this room is changed every twenty minutes, being pre-heated when desired. The public lavatories are situated in rooms just off of the waiting room, and are finished with wall hung bowls, metal toilet partitions, tile walls and floors. The octagonal shape of the waiting room permits, as will be noticed on the plan, five of the seven stores to have an entrance directly to the traveling public, thereby giving these stores two fronts. The ticket counter is somewhat different from the average ticket counter in that it is so arranged that below the counter itself each ticket vender has his full supply of something over two hundred tickets before him in a space no larger than 21 by 12 inches. Each ticket seller's department can be locked upon his leaving, thereby giving a sure and accurate check of all sales. The wood finish of the waiting room and office is quarter sawed oak. The floors in the offices are covered with inlaid linoleum.

The building is constructed of reinforced concrete and the preparation of the plans and construction of the building covered a period of 105 days. This was accomplished by double shift methods both in the drafting room and construction department. Electrical hand saws and quick setting cement were used to facilitate greater speed. As an example of the rapidity with which the work was carried on it might be said that the dome over the waiting room, which is five inches thick, was poured in one continuous operation, and had its forms removed 48 hours after the last pouring. The approximate cost of the building was $125,000 or about 27 cents per cubic foot.

IDEAS for THEATRE STAGES

By

Daniel Jitzkee.

ARTICLE II

NOW I could go on from my last article and quote you a lot of things that other men have written. I could show you how to run lines of sight to establish your balcony height, or go into parabolic curves and that sort of thing. But I am not going to do that.

I assume that you know all this type of stuff, or that you know where to get it.

So I am going to get off the beaten path a little—besides this series of articles is not intended to teach you how to build a theatre. Its main import is to enlighten you on the technical side of the stage.

This article is principally intended to discuss the stage equipment —or more properly the strictly mechanical equipment.

Obviously the first thing to discuss is the asbestos curtain. The curtain itself is made from a fabric composed of asbestos fibre and cotton. Contrary to the general impression, it is not wholly non-inflammable, and its primary purpose is not to stop fires.

There is from ten to fifteen per cent cotton in the fabric. This cotton is twisted into a yarn with asbestos because the asbestos fibre in itself is not sufficiently strong to support the weight. To add strength the asbestos and cotton yarn is wound around fine brass wires—a double wire the warp way and a single wire in the weft. A standard material weighs about 2¾ pounds to the square yard. There is a three-inch hem sewn on each side of the curtain for the purpose of attaching the curtain guides, placed about every two feet up either side of the curtain. At the top and bottom are six-inch batten pockets. All sewing I might mention, is also done with asbestos yarn, which in itself is partly cotton.

The primary purpose of an asbestos curtain is to stop the smoke and gas from the stage—in case of a fire there—from getting into the auditorium. For that reason then the curtain slides in smoke pockets placed on each side of the proscenium arch. This smoke pocket is usually a sheet-iron affair four to six inches deep, six to twelve inches wide and extending from the stage floor to the gridiron. See Fig. 1. Sometimes the smoke pocket is put in to run a few feet higher than the proscenium arch.

Frankly if the curtain can be rigged so that it will not foul the end of the smoke pocket in its descent, I can see no sensible reason for making it any higher than enough to accommodate the full height of the curtain. Its sole purpose, as I said before, is to act as a seal to the proscenium opening.

While on this subject of the proscenium opening seal, I might observe that in spite of the fact that there is a seal on each side of the arch, there is no provision made for sealing the top—once the curtain is in place. The only solution of this problem that I have ever seen was suggested to me by Edwin H. Flagg some time ago. He suggested

that since there is a cross member usually running from side to side behind the proscenium arch, a few feet above it, it might be advisable to hollow the top of this in a semi-circle and partly fill it with sand. Then if you would put a curved sheet iron member on top of the asbestos curtain batten, it would bury itself in the sand when lowered and in this way would seal the top. (Fig. 2.)

I think it is a good suggestion, and I believe he has installed it in certain instances.

If provision can be made for the smoke channel before the concrete is poured much expense can be eliminated. In this case have the form made so that there is a jog left in the inside edge of the proscenium wall. In this way one flat piece of sheet metal may be secured to the wall, without there being a projection inside. And you still have an excellent smoke channel.

Fig. 1.

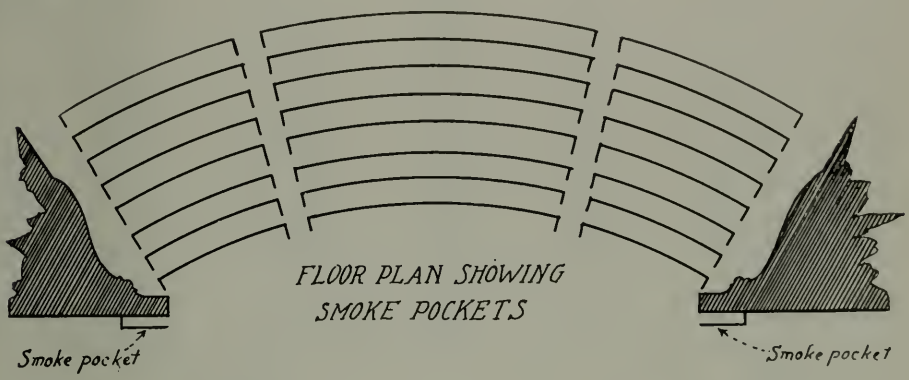


Fig. 2.

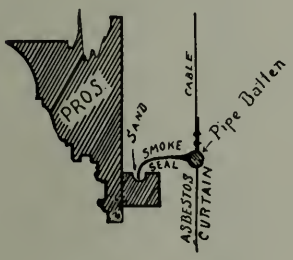
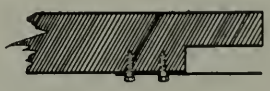


Fig. 3.



The battens used in an asbestos curtain are usually 1½ inch diameter pipe in the bottom pocket and either a 1½ or 2 inch pipe in the top pocket—depending upon the size of the curtain. Secured to this batten are ¼ or ⅜ inch cast-steel cables. Do not confuse this with the iron sash cord, for this is not adequate. The cast-steel cable because of its flexibility is imperative.

These cables pass up over ball or roller bearing sheaves in cast iron housings, thence over its parallel lead block and are secured to the curtain clew. Suspended to the curtain clew is the counterweight on an arbor. Operation is accomplished by means of a large ¾ inch Manila endless line.

Because it is best to have the endless line as close as possible to the proscenium arch, and for other reasons, the head block is not placed

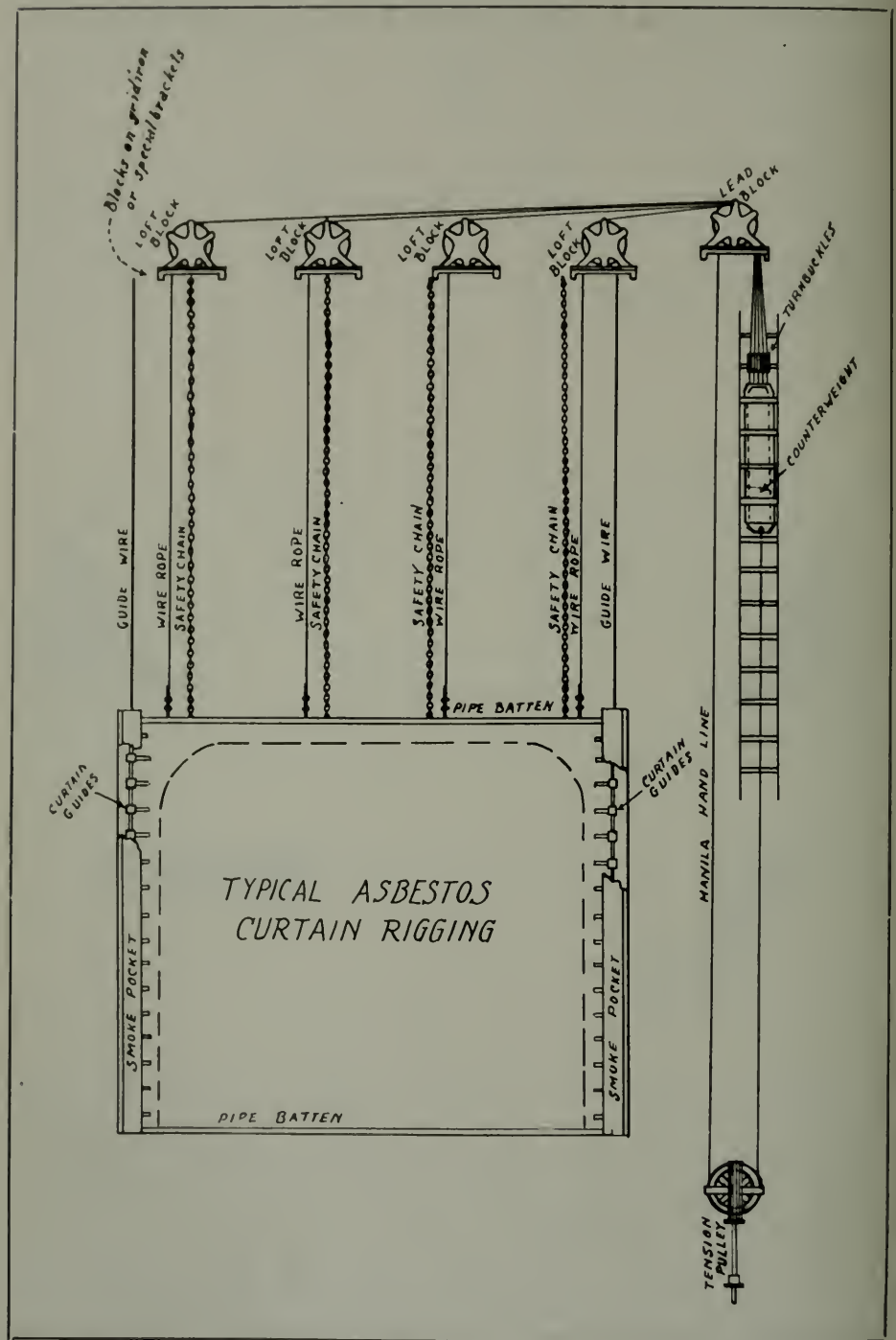


FIG. 4 TYPICAL RIGGING FOR AN ASBESTOS CURTAIN

at the same place as those for the regular sets. This line usually runs down between the proscenium arch and the switchboard. Thus, everything connected with the asbestos curtain is fireproof except the handling line. That this is not fireproof is an advantage. The curtain is usually arranged so that it is a trifle heavier than the counterweight assembly, so that it will automatically lower by cutting the rope, or with the melting of a fusible link. Further securing this curtain are safety stay chains in the proscenium wall to prevent the curtain falling in case the cables give way.

Now let me digress here to state that contrary to the general impression there is no such thing as a state law on the installation of fire curtains. Any legislation on this subject is invariably a matter of city ordinance. Thus, we have two separate and distinct sets of requirements in Los Angeles and San Francisco. San Diego differs from these again, and so on.

The standard for the installation of asbestos curtains is based upon the specifications issued by the Board of Underwriters. Yet these are not always based upon good sane logic.

For example: Because the Board of Underwriters suggests that a slot be cut in the front of the gridiron to accommodate the asbestos curtain, and that the curtain blocks be mounted on special brackets secured to the proscenium walls, many cities specify this method. But in the case of an all-steel gridiron this is utterly ridiculous. Steel gridirons are supported on huge steel beams from ten to sixteen inches deep. Observing this specification prevents this beam being taken clear to the proscenium wall, but instead makes it compulsory to support these on members running transversely—each end of this transverse member being in turn secured to beams on either side of the proscenium arch. What happens? The gridiron for one thing is weakened considerably. The gridiron cost is increased considerably.

Then we put up special brackets made from $1\frac{1}{2}$ or 2 inch by $\frac{3}{8}$ angle irons. The blocks are placed on these, with the result that the heavy fire curtain is directly dependent on the strength of these brackets. Which do you think is the stronger, and which will resist fire the longer? This bracket, or a sixteen inch I-beam buried into the wall? The bracket is ridiculous when you bear in mind the fact that if the slot were not cut in the front of the gridiron, the asbestos curtain blocks could have rested directly upon these huge beams.

By the time the fire is so intense that the I-beams or channel irons give way there will be no further need for an asbestos curtain.

In the case of a wood gridiron it is perfectly proper to cut the slot in the front of the gridiron. But most manifestly not in the case of a steel gridiron.

Now another thing to think of in this connection. Did you ever see what happens to an asbestos curtain in an intense fire? I had that experience once. The curtain charred immediately—the cotton content having burned with the first scorching. Within a few minutes the wire insertion began to melt and the curtain began to sag in the middle. Soon the wire gave way and a tremendous rent split the fabric from side to side. In no time at all the lower half of the curtain had fallen to the floor.

For that reason I am not completely in accord with the idea of the slot—even on a wooden gridiron—providing the wood supporting the gridiron is sufficiently heavy. I am inclined to think that in case of a fire heavy enough to burn the wooden beams through—as I started to say, I am inclined to think that the asbestos curtain would go first.

However, that is just a theory, so I am content to let the wooden gridiron go with the slot for the curtain. But never in the case of a steel gridiron.

However, if it is necessary to put the slot in the front of the gridiron for the physical reason that you could not otherwise clear the proscenium opening, go ahead. That's different.

There is no question in my mind, however, that the vent over the top of the stage, one-eighth or one-tenth in area of the stage floor, is a thousand times more valuable in case of fire than an ordinary asbestos curtain.

Figure 4 shows a typical rigging for an asbestos curtain. They are all installed along this line.

What would I caution you on in specifying such an installation? See that you get cast-steel wirerope made of six strands, nineteen wires to the strand. You might get iron sash cord as a substitute—it costs much less, you know.

* * * *

MR. MULLGARDT THINKS THE INSTITUTE JOURNAL HAS MISSED IT'S CALLING

Editor The Architect and Engineer,
San Francisco, California.

San Francisco, October, 20, 1926.

Dear Sir:—

I observe your editorial commending the Institute in its purpose to enter a campaign—educating the public through its Journal. That is something which also appeals to my judgment. The Institute has up to the present been a National Factor of but small consequence; its growth and productiveness has been like that of a tree on which the branches are constantly pruned so close to the bole that no fruit may grow on it, beyond the selfish needs of its owner.

Attached you will please find a copy of my letter to the Journal under date of April 30, 1926. It dwells at length on recommendation that the Institute use the Journal to educate the public and abandon its stereotype formula in other respects.

Should there be anything which you consider worth quoting therefrom I see no objection thereto now that the Institute has reached that conclusion also; permission is therefore granted.

Cordially yours,

L. C. Mullgardt.

Mr. Mullgardt's letter to the Institute Journal follows:

The Journal of the
American Institute of Architects
250 West 57th St., New York City.

Dear Mr. Nelson:

I beg leave to quote from your letter of the 6th inst., this sentence: "Won't you please write us your frank opinion of what we are doing?" That request sounds genuine, therefore, it is my object to comply with it, although the task is not to my liking, as the opinions will not be agreeable to your own, for which I am sorry.

It must be understood that there will be nothing in my remarks which have the slightest personal implication, and that they are based entirely on the subject of Institute policy.

It must be apparent to your organization that the members of the Architectural Profession are actually clogged with printed matter: books, magazines, pamphlets, catalogues, advertising data for files, folders, letters, post cards, etc., etc., covering every phase of the arts and sciences. These objects come pouring into the office like an ever flowing stream of repetition and more repetition, representing endless waste of material, time and money.

If everything received in an architects office was new information, it would then be regarded with the careful consideration which the senders evidently presuppose; in that event the accumulation for filing, etc., would be enormous and baffling; it would require a ponderous store room with a librarian in charge.

Excellent material is being used in enormous quantity with which to make the fine paper and inks with which countless waste paper baskets are stuffed each day. It imposes arduous and tiresome labor to go through the daily grind of assorting, inspecting and disposing of the mass, which interferes tremendously with the architect's office duties.

It is not apparent that the Journal has cause to add its quota to that mass of advertising, other than to increase its own emoluments thereby, which it is empowered to do, because of the suasive backing of the Institute, however inadvertently it may be.

Before the Journal came into existence, there were more than sufficient architectural publications, also more than sufficient magazines, periodicals and papers in which to inform the world about everything.

Unless the Journal performs important duties toward the advancement of architecture, such as other publishers are ostensibly unable to perform equally well, then the Journal must appear as interloper abetted by the Institute. Advertising methods, however excellent, cannot justify a pretentious Institute Journal.

The Institute makes no vigorous effort to reach the public; it continuous milling within itself from year to year, feeding its members on hard tack law and ethics, and wailing for more members and funds.

The Journal has the aspect of antiquarianism, with its picturesque photographs and prints of dear old sweet things, so appropriate to an antiquarian organization.

I have longed for many years to see the Institute develop into a wide-awake national institution, telling the public what's what, relative to architectural achievements throughout our great land; using the Journal to command the attention of the public with real live stuff, carefully selected by special chapter committees throughout the country, and again passed upon by a special committee of experts. Serve the public first—then the Institute, and the profession will also have been served. Do it by heralding modern architectural achievements, thereby inspiring architectural progress.

I would have the Journal become the best modern architectural exponent. The members of the Institute can make it so, if given a chance. If that ever becomes a fixed purpose, then the Institute will be a prepossessing factor in American life.

Faithfully yours,
L. C. MULLGARDT, F. A. I. A.

Bohemian Club, San Francisco.

The
ARCHITECT
and
ENGINEER

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IMPROVE THE SPECIFICATIONS

The matter of specifications is being given more study today than ever before. There is no denying that this part of the architect's work has been least satisfactory in the past. In fact, the architect himself has been all too conscious of its shortcomings. The specifications turned out by the average office are the weakest part of that office. The younger architects are more or less dependent upon stereotyped items that are not always applicable. The older firms have been able to turn out a better class of specifications through constant study and experience and naturally they hesitate to release this information for public consumption, although admitting the need of educational methods among the younger practitioners. The Architect and Engineer has been asked to publish several examples of good and poor specifications and information is being gathered with that end in view. Comments and suggestions from specification writers will help us in presenting information of constructive value.

GARDENS FOR OPEN AIR DINING

We are strongly tempted during the fine weather of Autumn and Spring to remain out of doors as much as possible. We turn indoors for dining or amusements with reluctance. We know that it should be possible to dine in comfort in the open often and to hear good music and the drama there also. Many of those who have had the good fortune to sojourn unhurriedly through Europe recall such pleasures so keenly that they are filled with yearning for like joy under our favorable conditions here.

A spacious dining room may be actually developed under the open sky on a roof, or in a court or patio and rendered comfortable by means of the friendly protection afforded by the walls of neighboring buildings, by glassed windbreaks or by hedge plantings in boxes well provisioned with deep rich soil. Large specimen plants established in great urns of good color and attractive design, tile or brick pavements enclosing grass plots and flowers, pools, fountains and seats may lend enrichment and invitation to the picture.

There is splendid opportunity when space is generous to create pleasing formal effects with strong axial feeling and forceful rhythm. Repose for the eye will be found in the varying shades of green in the shrubbery richly contrasted with the colors of annuals and perennials, of tile and brick, of water and sky. In very sunny weather the scene may be enlivened by the gay colors of sun umbrellas and

richly striped awnings. The distinctive costumes carefully chosen for the waiters will naturally add the stimulating element of movement in the scene.

In Western America we have thus far neglected great opportunities along these lines. The landscape profession is qualified by taste, skill and judgment to help owners who would develop such attractive projects and solve their problems, practical and aesthetic. Why should those who build structures to which such gardens are appropriate fail to avail themselves of their advantages?

EMERSON KNIGHT,
Landscape Architect.

MAKING THE OLD LOOK NEW AND THE NEW LOOK OLD

The move to give Notre Dame cathedral a sand bath to restore the whiteness of the old structure, of which its thirteenth century builders were so proud, has raised such a storm of criticism in Paris that the work will be abandoned.—Chicago Tribune.

This clipping under a Paris date line of September 6, calls to mind the fact that the Indiana limestone industry has continually discouraged the use of sand-blasting as a method of cleaning stone, on account of its decidedly injurious effects, and at the present time this organization is engaged in research work to develop new methods of cleaning.

The fact that the attempted cleaning of this famous cathedral in France has raised such a storm of protest would seem to indicate that stone work which has been aged and mellowed by the centuries has an appeal which a bright new sand-blasted surface would destroy, to say nothing of the injury that would be done to the surface of the stone by such a method of cleaning.

Some architects like to have their buildings look old and they have been known to resort to experimental methods for the purpose of giving stone and cement the appearance of age. This has been the case particularly with Spanish houses where the effect of old adobe was desired.

FOR BETTER CONTROL OF CONCRETE

Portland Cement Association deserves to be commended for its interest in the dissemination of knowledge to architects, engineers and contractors in the design of concrete mixtures and field control of concrete. Lectures and demonstrations have been given in all the leading Pacific Coast cities and several thousand persons interested in concrete work have attended these meetings. The talks have been made by staff members of the Portland Cement Association's Research laboratory in Chicago. No admission fee was charged, the expense of the campaign being borne entirely by the Association in the interest of better concrete construction. Much good is sure to result. Contractors have been shown the dire results of improper mixtures and many perplexing questions have been satisfactorily explained. Problems of design for predetermined strengths have been worked out with local aggregates, cement and water, and those who have attended the meetings have gathered information which they declare has given them a better vision and a clearer understanding of the factors which determine the strength and quality of concrete.

Why Employ an Architect?

(Pacific Builder and Engineer)

IT HAS BEEN aptly said that "he who is his own lawyer has a fool for a client." A like remark may with equal wisdom be made concerning the too common practice of building without an architect. It is strange, indeed, how a person of otherwise good judgment, who would not think of trying to set a broken bone without the help of a physician, to repair a broken pipe without a plumber, or to cook a muffin without aid from an adept in that line, will still rush into a building proposition of almost any magnitude, involving the expenditure of more money than he ever spent before or will again with the utmost confidence as to the outcome, though no architect has prepared or even been consulted as to the plans. And yet building is one of the most complicated sciences of modern life.

The actual and almost invariable result of building in this way is that (1) the plan of the building is such that it ill fulfills its purpose; (2) the design is atrocious; (3) the materials or construction or both are so faulty that frequent repairs become necessary; (4) the cost is too great, and (5) the owner having discovered some of these things too late gets into a dispute with the contractor and pays for more in delays and attorney's fees than the architect's services would have cost in the first place.

To the ordinary layman a building consists of a floor, four walls and a roof; and he considers himself or any contractor as capable of laying them out as an architect who has spent his life studying the infinite variations of these elements with reference to both beauty and utility, and who has learned of necessity the many things that must be known about the long list of materials and their proper use, which enter into the construction of even the simplest building. In brief, the most valuable asset of any building is the plan. The owner will in any event pay for it, but he will not get it unless he employs a competent architect.

What he "saves" by not employing an architect he will pay out for changes in the work, repairing faulty construction, inconvenience of arrangement, and depreciated value by reason of faulty design. Building is one of the most complicated sciences of modern life, and no one who is not giving all of his attention to the study of it can pretend to make plans for an economical, efficient, and beautiful building.

If more evidence were needed to establish the value of the architect's services, it should be sufficient to quote the following statement made by the president of the Metropolitan Building Co. of Seattle before the Members' Council of the Tacoma Commercial Club:

"In the last few years this company has spent over $15,000,000 in building operations. We have learned that in even so simple undertakings as moving an office partition or fencing a vacant lot, it pays, times over, to employ an architect to plan and supervise the work."

A Defense of the Frame Dwelling

American householders are the victims of a destructive building philosophy that is being widely cultivated. This philosophy teaches that lumber construction of dwelling houses is only a temporary makeshift, and that the frame house is a fleeting instead of a permanent feature of American home-building. As about eighty-five per cent of all dwellings in the United States are built mainly of lumber, and as three out of every four houses erected at the present time are lumber, this teaching strikes at the pocketbook of every saver and investor in homes.

The defense against this sort of misinformation is interestingly presented by an article in the American Lumberman which concludes as follows:

"Permanence, which applied to materials utilized by man, is a purely relative term. No material exposed without protection from the elements will last forever. Wood decays, steel rusts, marble disintegrates and wears away. The soil itself is only disintegrated rock, broken down by frost and water. All the forces of nature and even the habits of mankind combine to produce change. Nature will not permit and man does not require that 'things shall remain as they are.' On the contrary, every step of progress is achieved by remodeling or abandoning structures, implements and customs that change in taste or use renders out of date or inadequate.

"Wood under ordinary conditions of use and exposure outlasts the life of man, even of several generations of men; as witness the numerous Colonial dwellings still in excellent state of repair and highly desirable for beauties of architecture and spaciousness of interior seldom achieved before or since their building. All that wood as a building material requires is that it shall be treated with preservative if in contact with the earth and painted when exposed to the weather. When so treated wood equals in permanency and surpasses in beauty, warmth and comfort any other building material. Paint not only protects but it refreshes and renews the appearance of the wood dwelling to which it is applied. There remain no lime or rust streaks to distress the eye as long as the building lasts.

"Wood is the cleanest material to handle, the lightest to lift, the easiest to work and fit and in all ways the most adaptable of building and fabricating materials. It is beautiful in its own right, in grain, figure and sheen. It is tractable in working and responsive to finish, whether of wax, oil, paint or stain. In the hands of the skilled artisan its beauties and adaptabilities may be exhibited in all their perfection, and at the command of the clumsiest workman wood may be made to serve the crudest and most commonplace, but none the less essential, needs. Wood comes nearest to being the ideal structural material, and in its various species it offers limitless variety of color, grain, figure, texture and degree of hardness and strength.

"Centuries of experience have demonstrated wood's adaptability to the multitudes of needs of man. Skill and inventiveness have combined in devising methods and means of varying, combining and bringing out its beauties and utilities.

With the Architects

Building Reports and Personal Mention

Los Angeles Architects Busy

Architects Walker and Eisen of Los Angeles are reported to have more than $5,000,000 worth of work on the boards in addition to $11,000,000 under construction. Among the new jobs reported from this office is the Cortez hotel at San Diego for Richard Robinson, Jr., and Nat Grogan. This structure will have a central tower of 18 stories and two six-story wings containing more than 275 rooms. The Straus Company is financing the project.

The same architects have been commissioned to prepare plans for the new Edgewater Beach Club building to be erected on the Ocean Beach front of San Francisco in the vicinity of Tait's, at a cost of $1,250,000.

Monterey School

Plans are being prepared by Architects Tuttle and Slocombe for a $30,000 addition to the Monterey School. The same architects have prepared preliminary drawings for an eight-story apartment house facing Lake Merritt. This firm has also completed drawings for a Masonic Temple at College and Lawton streets, Oakland, to cost $45,000.

Medico-Dental Building

A Class A medico-dental building is to be erected on the northeast corner of 11th and L streets, Sacramento, for a corporation composed of physicians and dentists. The preliminary plans have been made by Architects Hyman and Appleton of San Francisco and the financing of the $1,000,000 project is in the hands of the S. W. Straus Co.

Fresno Warehouse

Architects Claude and F. Eugene Barton, San Francisco, have completed plans for a $50,000 concrete warehouse to be built in Fresno for the Bekin Van and Storage Company. This structure is to be occupied by Blake, Moffitt and Towne.

College Buildings

The San Bernardino Valley Junior College District has commissioned Architect Howard E. Jones of San Bernardino to prepare plans for a group of college buildings for which bonds amounting to $485,000 have been voted.

Marysville High School

Plans will be finished in December by Architects Davis Pearce Co. of Stockton for a $400,000 high school group at Marysville.

Society of Architects

The Alameda Society of Architects held a meeting on November 1st and discussed various matters of interest to the members. The Society has adopted a seal which will be used on all of its literature and on occasions where it is

SOCIETY SEAL BY OLSON

felt the organization will benefit in making better known its identity. It has been decided to postpone holding an exhibition of work until next spring so as not to interfere with an exhibition which the San Francisco Chapter is planning. The Society will hold regular meetings on the first and third Mondays of each month in the Athens Athletic Club building, Oakland.

Honolulu Architect Here

Architect C. W. Dickey, formerly of Oakland, now associated with Hart Wood in the practice of architecture in Honolulu, has been visiting friends in California for the past two or three weeks. Mr. Dickey reports that his firm is busy with plans for several large buildings in Honolulu, including a college and commercial structure. His partner, Hart Wood, recently returned to Honolulu after a pleasant stay of several weeks in California. Mr. Wood read a paper before the Engineers Club in Honolulu describing his visit to San Francisco and Los Angeles and called attention to various buildings the designs of which he characterized as good and others not so good.

New Corvallis Hotel

Plans for a $100,000 three-story hotel to be erected on the site of the present Corvallis hotel, Corvallis, are being prepared by Architect F. Hanson White of Portland. The hotel will be financed by the First Mortgage Security Company.

Architect's Contract Disputed

On the ground that the contract between Architect William Mooser of San Francisco and the Board of Supervisors, for the new Santa Barbara county courthouse under construction is not plain and apparently contradictory within itself, County Auditor Albert Eaves is preparing to submit Mr. Mooser's claims to the district attorney for investigation before they are paid, according to a newspaper dispatch from Santa Barbara.

The contract which is not clear to the county auditor is that entered into between the architect and supervisors January 4 of this year, in which Mr. Mooser was employed at 6 per cent of the cost to plan a $600,000 courthouse. Some county officials declare this contract to contain statements so contradictory as to invalidate it. Should their contention be correct the contract signed between the supervisors and the architect September 7, in which the architect is hired for an additional four per cent to supervise construction on the building is also invalidated, since the second contract contains a clause making it a part of the first.

Under the first contract Architect Mooser has collected two claims, one for $7000 and one for $11,000, without question. Since these payments the county auditor twice has withdrawn the Mooser contracts from the county clerk's files for study, and announces that he expects to study the two documents further in an attempt to discover what payments his office can legally make to Architect Mooser from county funds.

Concrete Columbarium

Architect Julia Morgan of San Francisco is recovering from a quite severe illness. Miss Morgan's office is busy on a number of important plans, including a reinforced concrete and stone columbarium for the California Crematorium, 4499 Piedmont avenue, Oakland. This structure is to cost $150,000.

COMPETITIONS

ALL WOOD HOUSE DESIGN

A prize of $2500 is offered by C. W. Stimson, Seattle lumberman, for an all wood home design which will best present the possibilities of woods native to the Pacific Northwest. Stimson offers the prize through the West Coast Lumber Trade Extension Bureau of Seattle. It is to be awarded in a nation-wide contest that will begin in January and close July 1, 1927. Other prizes in proportion, the bureau officials state, will be awarded.

POSITIONS AND HELP WANTED

The Architect and Engineer will insert free of charge, items similar to those found below, for the benefit of architects who are in need of draftsmen or draftsmen who are in need of a position. Give experience, qualifications and salary expected.

ARCHITECTURAL DRAFTSMAN — Wishes position. Has had experience with leading San Francisco firms. Address, Box A, care Architect and Engineer.

WANTED — Young woman draftsman wants position in architect's office to do general drafting and rendering. Phone Piedmont 838-J.

ENGINEER DRAFTSMAN — Position wanted by party having four month's experience with Bridge Department, State Highway Commission. Two year's experience on job work. Good at pen and ink work, maps and charts. Box B, Architect and Engineer.

ARCHITECTURAL DRAFTSMAN — Position wanted by graduate of leading architectural school. Has had some local experience. Box C, Architect and Engineer.

POSITIONS WANTED—Two Eastern draftsmen would like positions in California. Box D, Architect and Engineer.

DRAFTSMAN—All round architectural draftsman of three year's experience (8 months in one office) desires position in San Francisco or East Bay office. Salary $200 per month. Box E, Architect and Engineer.

DRAFTSMAN—Of 28 year's experience, wants position in architect's office in Oakland. Box F, Architect and Engineer.

ARCHITECTURAL DRAFTSMAN—Wants position in Northern California. Eight year's experience. Walter W. Miller, care Berkeley Y. M. C. A. Phone Berkeley 6710.

HAS POSITION but wishes to better himself. Young man with four year's experience on working drawings and tracings, now employed, wishes to better himself. Address Box G, Architect and Engineer.

WOMAN DESIGNER on residence work wishes position. Has had five year's experience. Last employed in Palo Alto. Box H, Architect and Engineer.

DRAFTSMAN WANTED — Leading firm of Honolulu architects want first class draftsman. Permanent position. Splendid opportunity for man wishing change of climate. Box I, Architect and Engineer.

DESIGNER and Chief Draftsman wanted. San Francisco architect has position open for right man. Must take charge of drafting room and do the designing. Previous experience in handling men necessary. Position might lead to a partnership later on. Box J, Architect and Engineer.

Architectural Draftsmen Organize

Graduates of the School of Architecture of the University of Washington, who are employed in Seattle architectural offices, have taken steps to organize, in anticipation of semi-monthly meetings during the winter. W. S. Kaufman of the office of E. J. Ivey is president, and John Matson in the office of McClelland & Punneh is secretary.

Annual Meeting of San Francisco Chapter, A. I. A.

THE annual meeting of the San Francisco Chapter, A. I. A., was held on Tuesday, October 19, in the room of the San Francisco Architectural Club, 523 Pine street.

In the absence of President John Reid, Jr., the meeting was called to order by Vice-President Harris Allen at 7:50 p. m. The following members were present:

MESSRS.

Wm. Crim, Jr.	Chas. F. Maury
Frederick H. Meyer	James H. Mitchell
Henry Gutterson	E. G. Bangs
Wm. G. Corlett	Ernest Coxhead
Albert J. Evers	Frederick H. Reimers
Harris Allen	Birge M. Clark
Leffler B. Miller	E. H. Hildebrand
Warren C. Perry	John H. Christie
Howard E. Burnett	Ernest L. Norberg
Edgar B. Hurt	

Mr. E. E. Johnson, Junior Member of the Institute, was present. The guests present were Mr. R. C. Buell and Mr. E. J. Kennedy of the Portland Cement Association and Mr. Walter Bates of the California Stucco Products Company.

MINUTES

The minutes of the previous meeting were accepted as published.

In the absence of President John Reid, Jr., there was no annual address of the President and for the same reason no report was read from the Executive Committee.

The report of the Secretary-Treasurer was delayed, and it was moved, seconded and carried that a committee be appointed to receive these reports and report to the Chapter at the next meeting.

REPORTS OF STANDING COMMITTEES

Committee on Practice:

Chairman Wm. G. Corlett made a brief verbal report.

Committee on Relations with Coast Chapters:

No report.

Committee on Building Laws and Legislation:

Chairman Frederick H. Meyer announced that he would give a written report at the next meeting. He gave a brief verbal report.

Committee on Public Information and Entertainment:

Chairman Harris Allen submitted a written report with recommendations, which was received and placed on file.

Committee on Education and Library of the Architectural Club:

Chairman Warren C. Perry made a written report on the possibility of placing the courses of the Architectural Club under University Extension. The report was ordered received and placed on file for further action.

Committee on Membership:

In the absence of Chairman Wm. C. Hays, Mr. Henry Gutterson reported verbally on the progress of the membership committee.

Committee on Uniform Code:

No report.

Exhibition Committee:

In the absence of Chairman Earle B. Bertz, Mr. Harris Allen made a verbal report.

Committee on Civic Development:

No report.

Committee on City Planning:

Chairman Coxhead submitted a written report, which was received and placed on file.

UNFINISHED BUSINESS

The Secretary reported on the various steps taken as directed at the last meeting in regard to changing the name of the Chapter. It was moved, seconded and carried that the following Amendment to the Constitution, published for twenty days and approved by the Board of Directors, be adopted and that the Executive Committee be empowered to take the necessary steps to effect its provision legally:

Amendment

The second sentence of Article I shall be amended to read as follows:

"It exists by authority of a charter granted by the Institute in accordance with its By-Laws and the corporate name of the society is the Northern California Chapter of The American Institute of Architects, and it is so incorporated under the laws of the State of California."

ELECTION OF EXECUTIVE COMMITTEE AND OFFICERS

The Chairman announced that, as no further nominations had been received, a motion was in order to instruct the Secretary to cast the ballot for the nomination of the nominating committee. It was moved, seconded and carried that the Secretary cast the ballot as follows:

President.....John Reid, Jr.
Vice-President.....Harris C. Allen
Secretary-Treasurer..Albert J. Evers

Directors for Three Years:

Fred H. Meyer Henry H. Gutterson

Other Directors, remaining on the Board are:

J. S. Fairweather.....Two years
Wm. C. Hays.....Two years
Earle B. Bertz.....One year
Wm. G. Corlett .....One year

NEW BUSINESS

The Secretary read a letter from the committee for the relief of Oscar Wenderoth. Since all Institute members had received the communication it was called to the attention of the Chapter and placed on file.

There being no further business, the meeting adjourned.

Respectfully submitted,
ALBERT J. EVERS,
Secretary.

After adjournment, members of the San Francisco Architectural Club and others joined with the Chapter, and Mr. Buell of the Portland Cement Association introduced Mr. E. J. Kennedy, who showed a film illustrating stucco textures and later demonstrated in actual mate-

rial beautiful color work in stucco. Those present were indeed fortunate to see such an instructive demonstration, and the thanks of the Chapter are due to the Portland Cement Association.

Architects Describe Tours

A number of architects who have recently returned from European tours gave interesting accounts of their travels at the October meeting of Southern California Chapter, A. I. A. The speakers were John Parkinson who talked on England and its cathedral cities, Sumner M. Spaulding on Spain and Italy, Eugene Weston on East Mediterranean countries and museums of Constantinople and Cairo, and C. R. Johnson on France, Italy and England.

J. J. Backus told of the work being accomplished toward developing a standard building code under direction of the California Development Association.

Seattle Architects Meet

Washington State Chapter, A. I. A., held its October meeting at the College Club, Seattle.

President Harlan Thomas, reported on the meeting of the executive committee, and explained the plan for lending assistance to the Treasury department in connection with the new federal buildings proposed for the Pacific Northwest. Winter meetings were announced for the first Thursday of each month.

Granted Certificates

At the meeting of the State Board of Architecture, Northern Division, October 26th, the following were granted certificates to practice architecture in this State:

Leo J. Sharps, 2126 Bancroft way, Berkeley; Norman W. Shaw, 71 Tunnel road, Berkeley; John van der Linden, 1241 Carrison street, Berkeley.

Hollister Hotel

Contracts have been awarded by Architect E. E. Young of San Francisco for an $85,000 store, office and hotel building at Hollister, San Benito county. The owner is J. R. Pendergrass. Construction will be of reinforced concrete.

High School Group

A group of new high school buildings is being planned for San Luis Obispo by Architects T. C. Kistner and Louis M. Crawford, associated. The new plant is expected to cost between $400,000 and $500,000.

Club House

Contract has been awarded by Architect Lloyd Rally, Subway Terminal building, Los Angeles, for a two-story club house for the El Sereno County Club. The architect estimates the cost of the building at $150,000.

Spanish Type Homes

Architect Henry H. Gutterson, 526 Powell street, San Francisco, has completed plans for two Spanish type residences to adjoin each other on Pacific avenue, near Lyon street, San Francisco, for Mrs. Leon Sloss and Mr. and Mrs. Lloyd Aekermann. They will cost $50,000 each.

Mr. Gutterson has also prepared plans for a two-story French type country house at Los Altos for Jesse Steinhart. The cost is estimated at $20,000.

New Fox Theatre

Working drawings are being completed by Architects Chas. Lamb of New York and H. A. Minton of San Francisco for the new Fox theatre which the Capitol Company is to erect at Hayes and Market streets, San Francisco, for $2,000,000. The theatre is to seat 5000 and from a mechanical standpoint will be one of the best equipped in the United States. The engineering work is being taken care of by H. L. Nishkian and Chas. T. Phillips.

Market Building

Plans have been completed by Architect S. Heiman, 57 Post street, San Francisco, for a one-story and mezzanine reinforced concrete market to be erected on the east side of Polk street, north of Vallejo, San Francisco, for M. Romey. The structure will cost $20,000. The same architect has completed drawings for two stores to be built on Polk street, south of Green, San Francisco, for J. S. Malloch.

Addition to Sales Building

Architect Jos. L. Stewart, Claus Spreckels building, San Francisco, has completed plans for a four-story reinforced concrete addition to the auto sales and service building at Van Ness avenue and Washington streets, San Francisco, for the Pacific Nash Motor Co. The structure will cover ground area 119x111 feet and will cost $150,000.

Oakland Club Building

The Women's Athletic Club of Oakland has commissioned Architects Chas. F. Roeth and E. G. Bangs, 1404 Franklin street, Oakland, to prepare plans for a $200,000 club building. Mr. Roeth is also associated with Couchot and Rosenwald in preparing plans for a concrete warehouse in Seattle for the Western States Grocery Co.

Veterans' Memorial

Plans have been completed by Architects Cole & Brouchoud of Chico for a Veterans' Memorial Hall for which an appropriation of $75,000 has been made by the supervisors of Butte county. The building will be one story and basement and constructed of concrete with terra cotta front.

Personal

Two years in Europe will be the award of Thomas Dolliver Church, a graduate of University of California, for excellence in landscape design. Church, who was graduated in 1922 from the division of landscape architecture, received word last month that he had been appointed to the John Sheldon Traveling Fellowship of Harvard University.

Architect Arthur G. Scholz has moved his offices to suite 4, Washington building, 6900 Washington boulevard, Culver City. Mr. Scholz is preparing plans for the Ocean View Beach Club building and for several residences.

Architect H. Ryan, formerly at 210 National City Bank building, is now located at 808 S. Vermont avenue, Los Angeles.

Paul Lupo, president of the International Artists' Association, was the principal speaker at the weekly luncheon of the Architects' League of Hollywood, October 27.

Bruce B. Ellis, county engineer of Pima county, is the new president of the Engineers' Club of Tucson, Arizona. Other officers are: Geo. Foster, vice-president; James Macmillan, treasurer; Gorm Loftfield, secretary; George T. Grove, Roy Place and Paul T. Robinson, directors.

Architect Robert Finkelhor, formerly located at 3912 W. Sixth street, Los Angeles, has moved to 1801 Santa Monica boulevard, Beverly Hills.

Beulah Rest Home

Plans are being prepared by Architects Wythe, Blaine & Olson for a three-story reinforced concrete home sponsored by the Women's Home Missionary Society of the Methodist Episcopal Church. A campaign to raise $100,000 is now underway. The building is to have accommodations for 100 persons.

This same firm of architects has completed plans for the new Broadmore Methodist church in San Leandro and a Community Methodist church in Albany, Alameda county.

San Francisco Warehouse

A three-story concrete warehouse is to be built on the southwest corner of 5th and Brannan streets, San Francisco, by Jos. Pasqualetti for the United Cigar Stores Company. The plans have been made by Engineer C. W. Zollner, 785 Market street, San Francisco.

Eight-Story Hotel

Architect Arlos R. Seddley, Kirkhoff building, Los Angeles, has completed plans for an eight-story reinforced concrete hotel to be built on South Bonne Brae street, Los Angeles, for Wm. A. Brown, at a cost of $350,000.

T. Beverly Keim

Architect T. Beverly Keim, Jr., of Los Angeles, was found dead in his office in the Haas building, that city, October 23, with a bullet wound in his right temple and an automatic pistol in his right hand. He was 42 years of age. In letters to his brother, W. C. Keim; his father, T. B. Keim, Sr., and G. Edward Blixt, a business associate, he explained that an artistic temperament that "clashed with the commercial world" coupled with ill health was the cause of his act, and that he had "stood all that was humanly possible." Mr. Keim had been engaged in the practice of architecture in Los Angeles about 15 years, and had been generally regarded as successful in his profession.

Memorial Highway Arch

The great Dog Creek arch bridge now under construction on the Pacific Highway in northern Shasta county, the highest and longest concrete arch in California, will be renamed in memory of the late Harlan D. Miller, bridge engineer of the commission under whose direction it was designed and placed under construction.

The Dog Creek bridge is over 400 feet long, its central feature being a great arch 234 feet long and 125 feet high. It is being constructed of reinforced concrete and the boldness of the design is typical of the work of Miller as bridge engineer for the commission.

School Children and Architecture

Members of the Oregon Chapter, A. I. A., have induced the Portland School Board to carry out a contest between students, the prizes going to those who are able to name the types of architecture carried out in that city's best designed buildings. The competition will prove of benefit to the students and will impart to them a keener appreciation of well planned structures. Architects should sponsor similar contests in other American cities.

$180,000 Santa Barbara Hotel

Construction is progressing rapidly on the new Barbara hotel, corner of State and Cota streets, Santa Barbara, which was destroyed by fire some time ago. It was designed by Architects Sauter and Lockhard. The building calls for an investment in excess of $180,000, with 125 rooms.

Beverley Hills Hospital

A Class A hospital is to be erected on the southwest corner of Sunset boulevard and Cory street, Beverley Hills, for the Beverley Hospital and Sanitarium, Inc. Plans for the $500,000 structure are being prepared by Architects Gable & Wyant.

Passing of Harlan D. Miller

Harlan D. Miller, bridge engineer for the California Highway Commission, died at his home, 1514 Twenty-ninth street, Sacramento, October 19th, after an illness extending over several months.

Mr. Miller first became identified with the California Highway Commission in 1919 when he was appointed assistant bridge engineer which position he held for four years. On February 1, 1924, he was advanced to the position of acting bridge engineer, succeeding H. E. Warrington. On November 1st of the same year he was named Bridge Engineer by State Highway Engineer R. M. Morton.

Under his direction the department was reorganized and developed into one of the major branches of the commission's activities. Bridge building was taken over from the counties and the work expanded until the department was supervising as much as $2,000,000 worth of work at one time.

Miller's work as bridge engineer has been characterized by boldness and beauty of design. Many structures which have added fame to the State highways of California have been built under his direction and have attracted nation-wide attention.

Engineers Meet

The regular monthly meetings of Los Angeles Chapter, American Association of Engineers, were resumed after the summer vacation period, with the September meeting. A musical program accompanied the dinner which was served at 6:30 p. m. At the conclusion of the dinner, President Olmsted introduced Mr. H. H. Krom, the first member of the Association when it was organized in Chicago. Mr. Krom gave a brief outline of his recent visits with Chicago headquarters, with President Ulrich in Salt Lake City and with members in San Francisco.

Everett W. Mattoon, Los Angeles County Counsel, was the speaker of the evening, and presented an analysis of the Mattoon Act, which was passed at the last session of the California Legislature. This act was written for the purpose of simplifying and facilitating improvement work proceedings, and its author explained fully and clearly how this purpose was accomplished.

Athletic Club

Architect L. A. Smith, 1584 W. Washington street, Los Angeles, has completed plans for a 14-story reinforced concrete club building to be erected at Sixth and Loomis streets, Los Angeles, for the Breakers City Athletic Club of Los Angeles. The building will contain 250 rooms and will cost $800,000.

Addresses Should be Complete

Editor The Architect and Engineer,
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Dear Sir:

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A Brick Is a Brick!

At the last meeting of the American Society for Testing Materials at Atlantic City, Committee C-3, which is the brick committee of the Society, voted to accept the following definition:

"Brick—A structural unit rectangular in shape and made of burned clay unless designated by a prefix indicating another material.

"Note—As through centuries of use a brick has been an object of clay, the term 'brick' if used without a qualifying adjective is understood, in the present state of the art, to mean a unit of burned clay. Bricks are usually solid, about 8″ x 3¾″ x 2¼″."

Hereafter a brick will be a brick, just as it has been for many centuries. If it is not made of burned clay it is not a brick, but is a synthetic product.

New Arlington Hotel

Work will be started this fall on a new $1,500,000 Arlington hotel at Santa Barbara to replace the structure destroyed in the earthquake and on a $500,000 hostelry at Las Vegas, Nevada, to care for an anticipated rush of tourist and commercial traffic there as a result of the Boulder dam power project.

The House Terrible

ALMOST amusing tale called "The House Terrible," by Frederick L. Allen, recently appeared in Harper's Magazine. Some of the remarks in this story struck the Editor as being so rare that he is quoting them below:

Are you thinking of building a house? Or on the other hand, are you not? In any case, I feel sure that this article will prove a precious boon to you. Written after a profound and protracted study of "The Lure of the Colonial," "The Appeal of the Hip Roof," "The Romance of Reinforced Concrete," "The Garden Ridiculous," and other standard works by our leading hack-writers, it assembles in convenient form all the wit and wisdom of the day on the problems of modern home-building. If after reading this article you still find any of your questions unanswered, I have nothing to suggest except that you write them out, inclose them with self-addressed envelope and drop them down the dust-chute.

Before we proceed any further, it should be made clear that we live in a new age. Time was when people thought of a house merely as a place to eat and sleep and keep their galoshes in. But now the idea is beginning to get about that a house should be something more than this. It should express the owner's personality. Nothing could be in worse taste, for example, than for a short fat man with fallen arches to build for himself an imitation of the Woolworth building; a moment's thought is enough to make it clear that the Woolworth building is suitable only for an extremely tall man with an electric light in the peak of his hat. A half-timbered man should never select the Colonial type of cottage; a Gothic woman, with flying buttresses and a face like a gargoyle should never use stucco—and so on.

I am often asked if architects are necessary. Is it possible to dispense with them, and if so, how may this be done? Speaking as one who knows a large number of architects, I should say that roughly thirty per cent of them are unnecessary and should be done away with, painlessly if possible. There are a number of efficacious preparations on the market for their removal. The majority of architects, however, are nicely behaved citizens with very pretty neckties and socks and a harmless preference for blue collars, and it would be little short of madness to attempt any wholesale action.

A particularly successful house, and one embodying many a useful hint to the home-builder, is the residence designed by Crabtree and Whiffletree for Ernest W. Goofus, Esquire, of Goofusville, New York, which is illustrated herewith (or would be if the pictures hadn't slipped down behind our desk and been swept up by the housemaid).

Messrs. Crabtree and Whiffletree's treatment of the problem was nothing short of daring. They painted the front of the house blue and flecked it with white, so that from a distance it looked exactly like a rather large wave; in fact, the triumph of their bold ruse was made clear the night that the Fall River Boat crashed head on into the house under the impression that it was a wave. "I must say I congratulate you," said the pilot to Messrs. Crabtree and Whiffletree at the coroner's inquest, "that house looked for all the world like a little bit of Long Island Sound."

The side of the house the architects covered with soft plaster, after which they invited the owners and a group of friends to throw pebbles at it from the beach. The pebbles became embedded in the plaster, forming a pattern of delightful informality, and after the broken glass from the windows had been swept up, the party was voted a success by one and all. That side of the house now looks so much like a beach that girls in one-piece bathing suits are constantly trying to sun themselves on it, and Mr. Goofus is enthusiastic.

The rear of the house was treated by the architects somewhat more severely, with decorations suggesting Sabbath Observance and the Support of Foreign and Domestic Missions, with the result that for the past six months the parishioners of the Central Congregational Church, entering into the spirit of the thing, have insisted on holding choir-practice every Thursday evening in Mr. Goofus' living room.

The house having been designed, and it is designed by now, isn't it, or what have we been doing all this time?—one should select a contractor. There is some difference of opinion over the best type of contractor, but personally I prefer tall ones with dark hair and waxed mustaches. It is well, however, to examine the contractor in every detail. Be sure that he fits exactly the description of him given you by the architect, and called the Specifications. The grain should be straight and without a flaw, or the contractor may crack in cold weather. A good test is to tap him lightly on the head with a hollow tile; if he cracks, it is a sign that he is defective. You should also be on the lookout for spots, especially pale whitish ones. If these break out on the contractor and cannot be removed with a damp sponge, you will know that the surface color has broken down and should at once send for a substitute.

The next step is to finance the building of the home. A picturesque old in-

stitution, of interest to home-builders, is the debtors' prison. Debtors' prisons were not unknown among the Greeks and Romans, but did not reach their full development until the big French building boom in the time of Charlemagne the Great (752 A. D.) when a great many Merovingians couldn't meet their second mortgage payments and had to be put away. From this time on the debtors' prisons steadily increased in number and in refinements of torture until the nineteenth century, when they were done away with by popular indignation. As they have now disappeared and the delightful custom of lashing debtors with whips has gone out, there is practically no financial obstacle in the way of the home-builder. All he needs is nerve.

It is a good plan to follow closely the construction of the house. The owner will be wise, however, to deal with the contractor only through the architect. If the contractor's spleen is aroused, he has the advantage of being surrounded by piles of heavy bricks, whereas the architect, situated as he is in a city office knee-deep in plans, is comparatively defenseless. It is usually quite safe to spend an hour or two a day suggesting to the architect changes and alterations and bright new ideas from your favorite home-planning magazine, especially if you carry a police-whistle. But never under any circumstances allow relations with your architect to become strained. If he throws a T-square at you, don't retaliate; depart and think up further alterations.

At last — say two and a half years later than you expected—the house will be completed. What a romantic prospect. Think of it—your own. Roof, fireplace, everything—yours. No more worry and fret—no more lines on your face—no more fist-fights with the landlord; instead of these will come self-respect, pride of ownership, and other nasty qualities. Will you not accept this priceless opportunity and build the house terrible?

Florida

For those who are interested in the recent storm in Florida, we are printing excerpts from a letter received from Clare C. Hosmer, who is now practicing at Sarasota, Florida, and is secretary of the Florida Chapter, A. I. A.:

"Speaking 'facetiously,' when one of his plate glass windows blew in during our recent hurricane, the proprietor of the Tip Toe Inn, whose patrons had their evening meal somewhat disturbed, cleverly passed the comment, 'California papers please copy.' The Big Wind was indeed a most thrilling experience, though an awful one. Throughout the twelve hours that we experienced its ravages, we 'suffered' with the poor folks in less fortunate parts of the stato, whose predicament had been given to us in the last 'flash' received by local telegraph offices before all contact with the outside was lost.

"Many lessons can be learned from this cataclysm. When walls are improperly built and bonded, they certainly cannot stand the one hundred and thirty mile per hour gusts, nor even sixty mile puffs. Even an eighteen-story skyscraper, when improperly braced, must suffer punishment which I understand will justify its entire demolition.

"We pass by the good intentions of 'parsons' the country over who endeavor to draw lessons from our recent experience. No one dares guess just how any structure is going to emerge from the ferocity of a storm the like of which one never saw.

"In spite of all that has happened, we are quickly emerging from its bad effects —we have our sunshine and our will to make our buildings more substantial, and I know that Florida's future is in no way affected—rather her experience will be that akin to San Francisco or Chicago."

The outstanding spectacle of Miami following the Florida hurricane is the Meyer-Keiser Bank building, which has been ordered demolished, declares M. R. McGruder, an insurance investigator who visited the devastated region.

Loans and all costs ran the building, which is fifty feet wide, one hundred feet deep and sixteen stories high, to $1,800,000.00, and the various financing features carried the placing of $1,000,000 tornado insurance. Action taken in condemning the building will relieve the companies, however, according to Mr. McGruder.

Buckling at the sixth floor, the skyscraper has been a menace since the storm, bricks frequently tumbling from the edges of great gaping holes in the building's face. It was found necessary to rope off the street in front of the bank.—Monthly Bulletin, Illinois Society of Architects.

Addition to Factory

A large addition has recently been completed to the Pacific Gas Radiator factory at 7541 Roseberry street, Los Angeles. This gives the company a total of 50,000 square feet of covered floor space which is used exclusively for the manufacture of Pacific gas heating appliances.

The year 1925 was the largest in volume of orders since the company was founded in 1913. In anticipation of increased business for 1926 the company has enlarged the general sales offices at 1740 West Washington street. Methods of gas heating originated in Southern California are being rapidly adopted in other cities, according to Mr. J. A. Hartfield, president of the company.

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Old Clothes—New Shingles

That old suit you discarded may be a part of the roof on that new house you are planning to build up there in the hills. Strange as that may sound, it is a fact, according to N. L. Brinker, director of sales at the Los Angeles Paper Manufacturing Company. In the backyard of this million dollar plant there are great stacks of baled rags, gathered to be carefully sorted and put through a series of processes necessary to the manufacture of building and roofing felts.

After the felt is completed it is put through the asphalting process, cooked and dried, and turned out in rolls of roofing, or in strips of specially surfaced asphalt shingles. Almost all of the clothes tossed in to the rag-bag in Southern California find their way to the factories where valuable products are being created from this form of salvage.

St. Francis Wood Residence

Milton Clark has had plans prepared by Architects Masten and Hurd of San Francisco for a $20,000 Spanish type residence in St. Francis Wood. The same architects have completed plans for a $14,000 home in Forest Hill for F. S. McCord.

Pasadena Hotel

Henry C. Jensen, Los Angeles, plans to erect a $350,000 hotel at North Raymond avenue and Holly street, Pasadena. Plans have been prepared by B. C. Kendall Co., 67 North Raymond avenue.

A Service to Architects

The Peerless Light Company, manufacturers and distributors of everything for lighting, has established a Service Department for architects and builders, placing in charge an illuminating engineer of wide experience in lighting problems. A request for advice will receive prompt attention at all times and no charge will be made for suggestions or assistance in laying out plans for the proper illumination of a building. The company's San Francisco address is 1114-1120 Folsom street. The Oakland office is at 811 Harrison street.

R. J. Pavert

R. J. Pavert, East Bay builder and president of R. J. Pavert Company, Incorporated, of Berkeley, passed away at the Lane hospital in San Francisco, October 24th, following an operation. Mr. Pavert had been active in the building business in Berkeley for the past six years. He is survived by a widow and an infant daughter, Audrey.

Steel Tubular Flag Poles — This pamphlet is published by the Pole and Tube Works, Inc., Newark, N. J., and has been mailed out to 9,000 architects for their files. It is free from superfluous sales verbiage and replete with technical information and illustrations. The pamphlet carries a list of distributors of steel tubular flag poles together with their addresses. Several plates give full size details of typical and unusual installations for various types of roof construction. H. M. Holway, 639 Howard street, is the San Francisco representative.

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Of THE ARCHITECT AND ENGINEER, published monthly at San Francisco, California, for October 1st, 1926.

State of California, } ss.
County of San Francisco }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared W. J. L. Kierulff, who, having been duly sworn according to law, deposes and says that he is the business manager of THE ARCHITECT AND ENGINEER, Inc., and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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Managing Editor—None.

Business Manager, W. J. L. Kierulff, 627 Foxcroft Bldg., San Francisco.

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W. J. L. KIERULFF, Business Manager.

Sworn to and subscribed before me this 25th day of September, 1926.

MARY D. F. HUDSON,
Notary Public in and for the City and County of San Francisco, State of California.
My commission expires December 22nd, 1928.

Dissolve Partnership

The architectural firm of Morrison & Stimson has dissolved partnership. Earl W. Morrison, senior member, has opened offices in the Seaboard building, and V. S. Stimson will retain the office at the Lumber exchange, Seattle, Wash.

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Increased Use of Structural Steel

THE nation-wide speaking tour recently completed by Charles F. Abbott and Lee H. Miller, Executive Director and Chief Engineer, respectively, of the American Institute of Steel Construction, has served to emphasize the steady progress being made by the Institute in its campaign to bring about improvements and economies in steel construction through standardization and better business methods in the structural steel industry.

Addresses were delivered by Mr. Abbott and Mr. Miller in 21 large cities from Philadelphia on the East, to New Orleans on the South, and San Francisco on the Pacific Coast. The usual program was a meeting of the fabricators alone in the afternoon, followed by a dinner and evening meeting attended by the fabricators and by mill representatives, engineers, architects, contractors, bankers and municipal officials. Attendance at the meetings varied from 20 to 50 for the afternoon meetings of the fabricators, and from 100 to 400 for the evening meetings.

In addition to addressing the meetings of the fabricators and others actively interested in building construction from one angle to another, Mr. Abbott and Mr. Miller addressed the engineering students of Leland Stanford University, Syracuse University, the University of California, and the students of five other technical schools or universities. A number of addresses were also delivered before Chambers of Commerce, technical societies, and the students of Y. M. C. A. engineering classes.

In Los Angeles an entire week was donated as "Steel Week," and at one of the many meetings in that city the representatives of the American Institute of Steel Construction addressed all of the foremen, erectors, draftsmen, salesmen, engineers, superintendents and executives of the local fabricating plants. The total attendance was over 300.

The objects and future program of the Institute, which was formed in 1921 by the structural steel fabricators of the United States and Canada to widen the field of usefulness of structural steel by standardization and the promotion of better business methods, were outlined at each meeting by Mr. Abbott. In touching upon the future of the structural steel industry, Mr. Abbott predicted that within the next few years steel would be extensively used for the frames of dwellings.

He pointed out that, aside from the factors of greater durability and protection against fire, a comparison of costs between steel and wood frames already favors steel. Further standardization of shapes and large scale factory production, he said, would still further lower the cost of steel for residence construction. "It is estimated," said Mr. Abbott, "that three and a half tons of steel in beams and girders alone, will be required for the average $15,000 residence. Since the number of such residences to be erected is beyond calculation, the use of steel in their construction will be an important factor in the demand for fabricated shapes."

The Institute's standard specifications for the design and erection of structural steel, and its code of standard practice, were discussed from their technical aspects by Mr. Miller. He emphasized the fact that the Institute is not primarily concerned with the adoption of any particular working stress, but that it is vitally interested in promoting the substitution of recognized engineering practices for the wide variatons existing in the past which have resulted in many unjustifiable practices and a lowering of standards. The Institute's specifications, according to Mr. Miller, were drawn to assure a combination of safety, durability and the most economic use of steel.

Determine Who's Responsible

One may well "view with alarm" the decision of the Court of Appeals of the District of Columbia which, in effect, rules that no architect, engineer or contractor can be held responsible for accidents due to faulty design or construction "after the work has been completed and accepted by the owner of the building."

Such was the decision of the court when it declared that Reginald W. Geare, architect who designed and supervised the construction of the Knickerbocker theatre of Washington, D. C., and John H. Ford, the steel contractor, cannot be held liable for damages which resulted when the theatre collapsed on January 28, 1922, killing almost 100 theatregoers.

The ruling was handed down in an appeal from the Supreme Court of the District of Columbia. The lower court found that the architect and contractor were guilty on a charge of negligence causing the death of one of those who lost their lives in the disastrous collapse.

If this ruling can be used as a precedent by all the courts of the land, then that type of architect, the engineer and the builder who is tempted to skin his jobs, cutting into the substance of the building, reducing cost at the expense of safety, may merrily proceed to endanger lives and fortunes—and let the owner hold the sack.

Coming at a time when the building industry is showing a strong tendency away from jerry building, the decision is most unfortunate.

One might now expect to find the unscrupulous in the industry retaining "professional" help whose main duties will be to induce the owner to accept the completed structure.—Building Engineer Seattle.

Daily Construction Reports

Daily Construction Reports are published at the close of each business day by The Architect and Engineer, for the exclusive use of advertisers. These reports embrace news gathered and compiled during the preceding 24 hours by staff reporters and correspondents.

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The Architect and Engineer

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CHAS. F. MASTEN AND LESTER W. HURD, ARCHITECTS

The
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ENGINEER

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RECENT HOUSES

Chas. F. Masten and Lester W. Hurd

By

STAFFORD L. JORY

WHILE architects have without question many differences, often freely expressed, they probably would all agree that they have the good fortune and responsibility of living in an age of progression in which architecture is also coming to a new expression. This is, of course, more dramatically shown in the larger opportunities and monumental undertakings but is possibly all the more evident because one sees its force expanding to include the work done in the humbler fields and by the younger men—where artistic effort is by its economic conditions more limited.

It is with this in mind that the work of Masten and Hurd gives a genuine pleasure, for undoubtedly their work has largely been in the service of those without unlimited means at their disposal. It is possible that in some cases their clients possess little more than the desire and means to surround themselves with homes of taste and must of necessity take time to gradually replace their furnishings so that they may be in more keeping with the quality of the architecture.

These architects in all their work impress one with their serious desire of arriving at some decorative expression as well as practical solution of their problem. While at times there is possibly a slight tendency

Photography by McCullagh, Berkeley, California

to an unusual flourish, on the whole, excellent taste and a quiet dignity, with good scale and proportion prevade their work.

The Del Rey house in Berkeley is a straightforward, simple expression of the college fraternity house: a certain lack of vigor possibly in the decorative forms, but nevertheless a thing of fine proportion and unquestioned dignity. The Tau Kappa Epsilon fraternity appears more restless but still shows their strong underlying desire for decorative expression.

HOUSE OF J. M. CUMMINGS, SAN FRANCISCO
Masten and Hurd, Architects

In their smaller houses it would almost seem that their tendency is more toward what might be called the English type—possibly because it lends itself more readily to that scale of work, or possibly it is their natural heritage. But what can be finer for a beginning to build upon than English or early American homes and their traditions! Provided, always, that we make them grow to be ours.

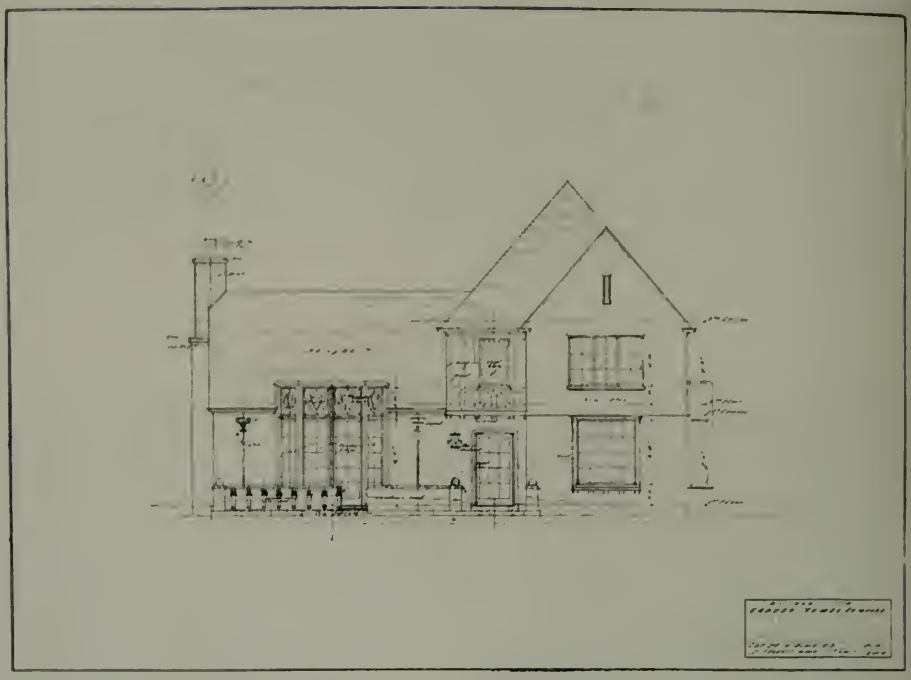
This type is probably best represented by the residence of Mrs. Constance B. Edwards at St. Francis Wood which has the intimate

charm of the English cottage and some of the real English home character. Closely followed in interest are the residences for the Garden Homes Company, also at St. Francis Wood—the row of houses showing what can be accomplished with such developments or when the intelligent architect is given a little opportunity. Of the Colonial Georgian type are the homes of Mr. Brisbane and Dr. Reynolds, etc.—all of good quality. The house of Mr. Cummings is especially appealing, perhaps partially because of its natural setting.

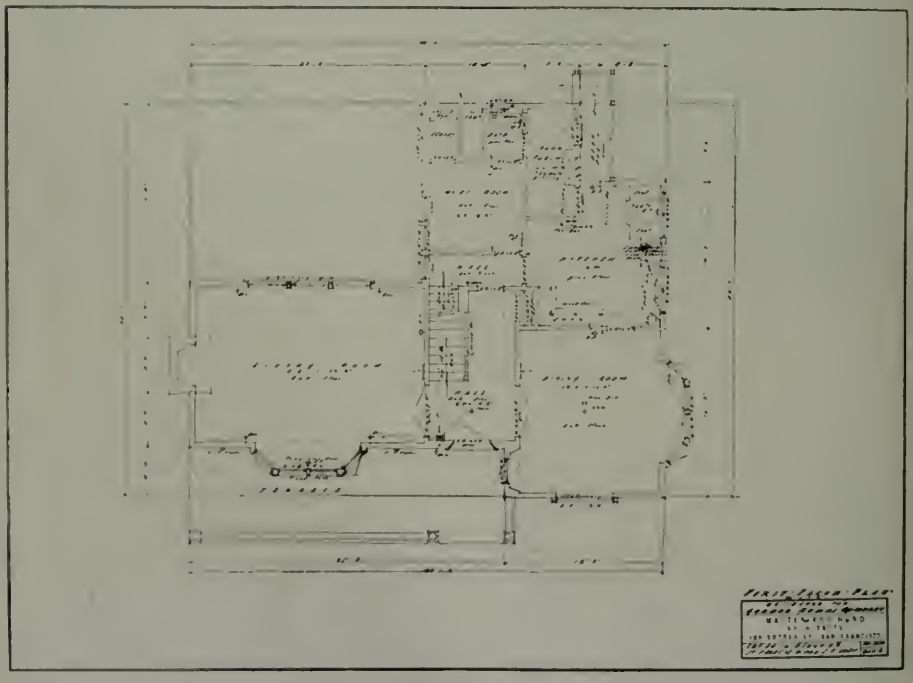
HOUSES IN ST. FRANCIS WOOD, SAN FRANCISCO
Masten and Hurd, Architects

In the other group, known generally as Mediterranean, the homes do not seem to be so natural as solutions of the particular conditions as the preceding. The home of J. Locke Breaux has a real appeal due to its simplicity and directness, which probably makes it equally interesting with the Snowden residence in spite of the latter's interest of detail.

One looks forward with interest to Masten and Hurd's development when their small houses will become even more natural and spontaneous and when, in more elaborate undertakings, their decorative desires will be given increased opportunities.

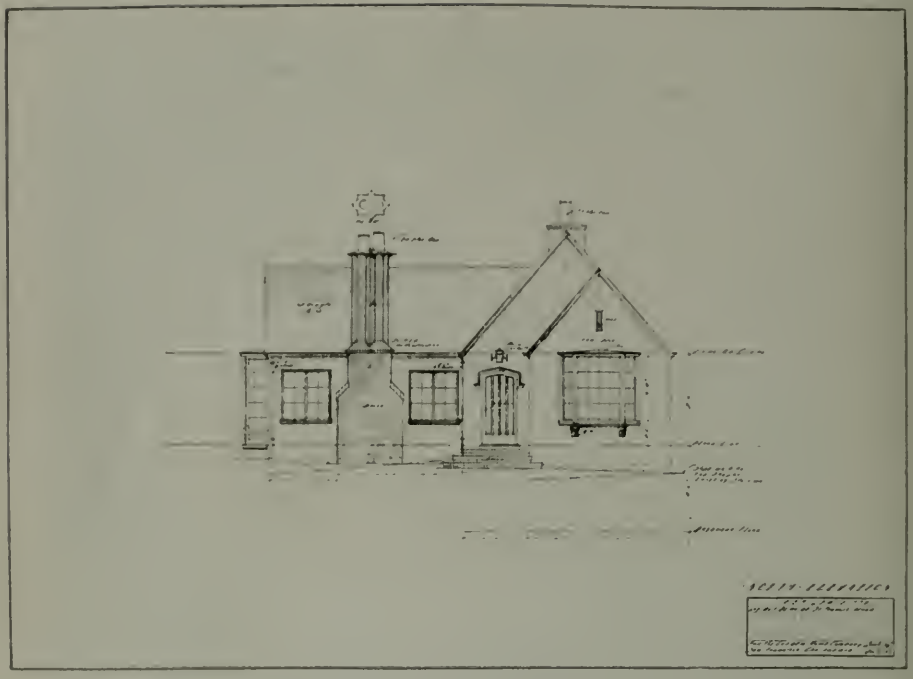


ELEVATION, HOUSE IN SAN FRANCISCO
Masten and Hurd, Architects

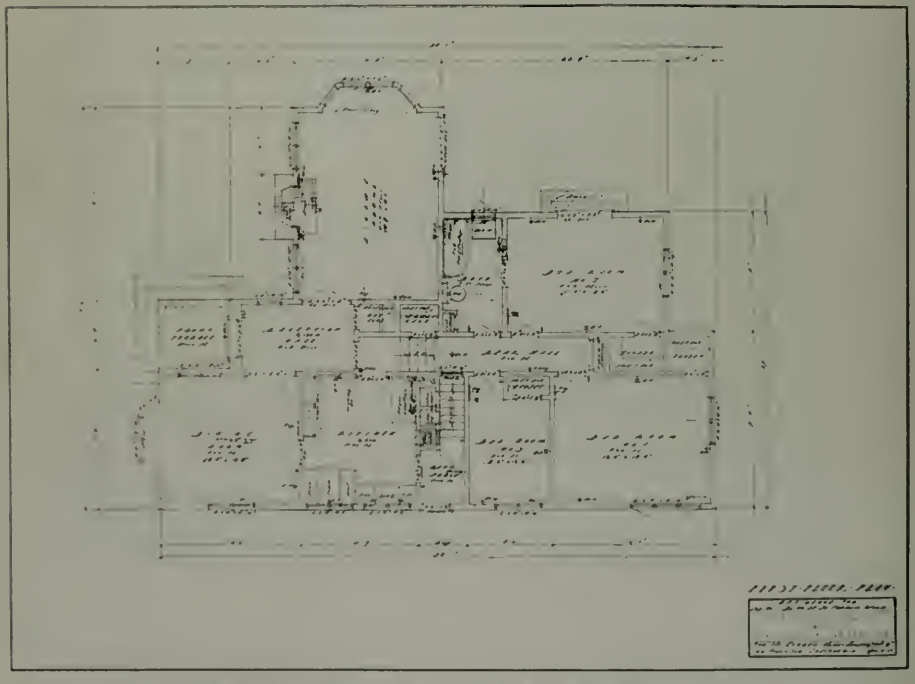


FIRST FLOOR PLAN, HOUSE IN SAN FRANCISCO
Masten and Hurd, Architects

HOUSE IN ST. FRANCIS WOOD, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS



ELEVATION, HOUSE ON SANTA PAULA AVENUE, SAN FRANCISCO
Masten and Hurd, Architects



PLAN, HOUSE ON SANTA PAULA AVENUE, SAN FRANCISCO
Masten and Hurd, Architects

HOUSE FOR GARDEN HOMES COMPANY
MASTEN AND HURD, ARCHITECTS

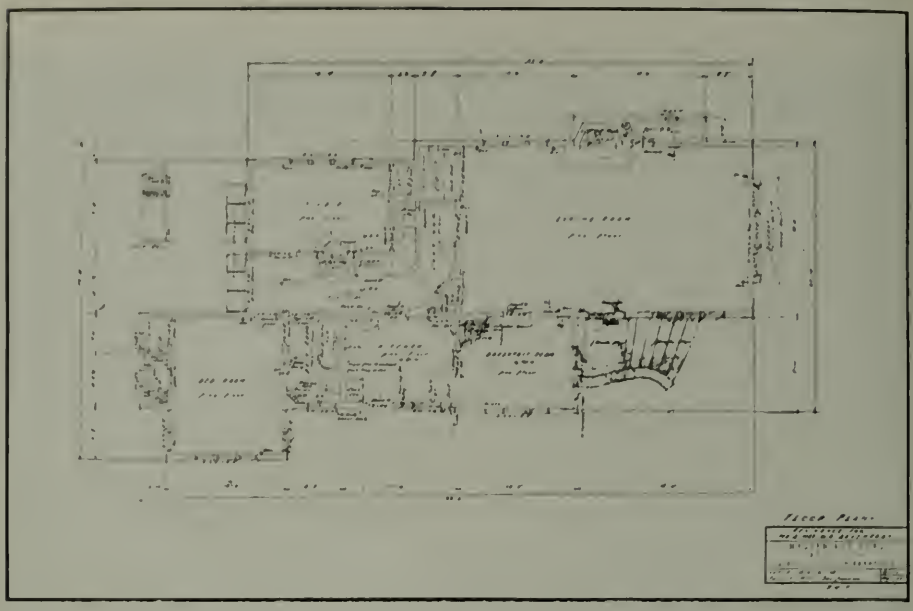
HOUSE OF W. R. DAVENPORT, SAN FRANCISCO
Masten and Hurd, Architects

HOUSE OF W. R. DAVENPORT, SAN FRANCISCO
Masten and Hurd, Architects

HOUSE OF W. R. DAVENPORT, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF W. R. DAVENPORT, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF W. R. DAVENPORT, SAN FRANCISCO
MASTEN AND HURD. ARCHITECTS

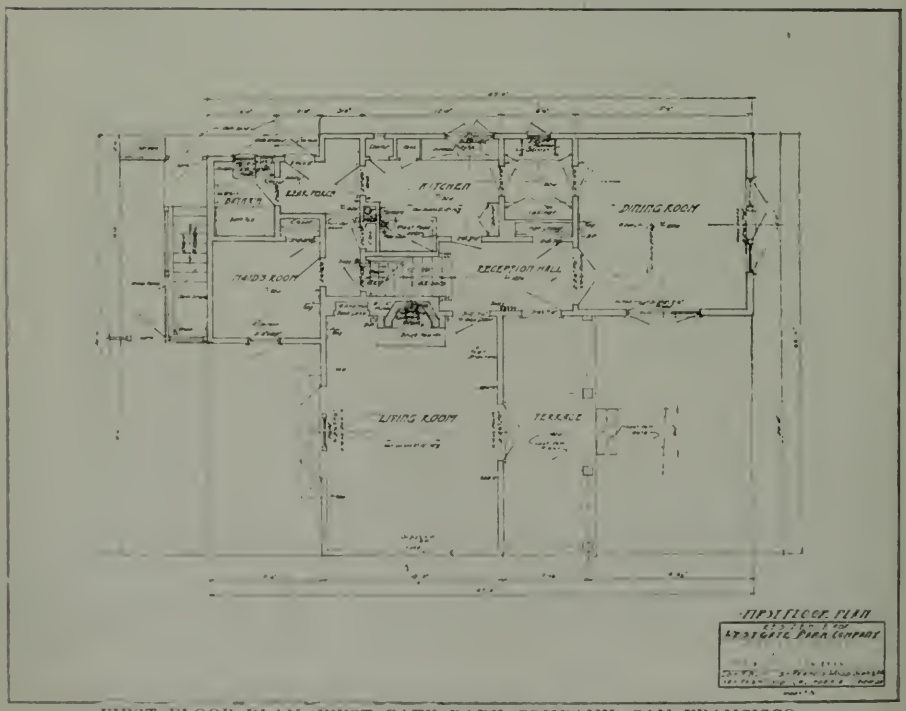


PLAN, HOUSE OF W. R. DAVENPORT, SAN FRANCISCO

HOUSE OF O. D. SHORT, SAN FRANCISCO
Masten and Hurd, Architects

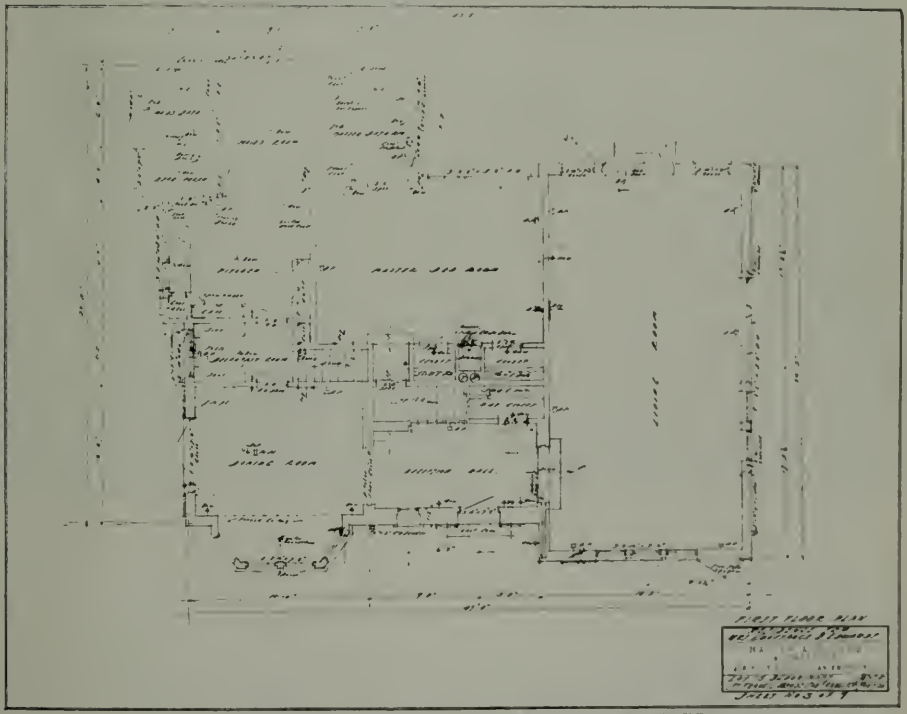
HOUSE FOR WEST GATE PARK COMPANY
MASTEN AND HURD, ARCHITECTS

HOUSE FOR WEST GATE PARK COMPANY, SAN FRANCISCO
Masten and Hurd, Architects

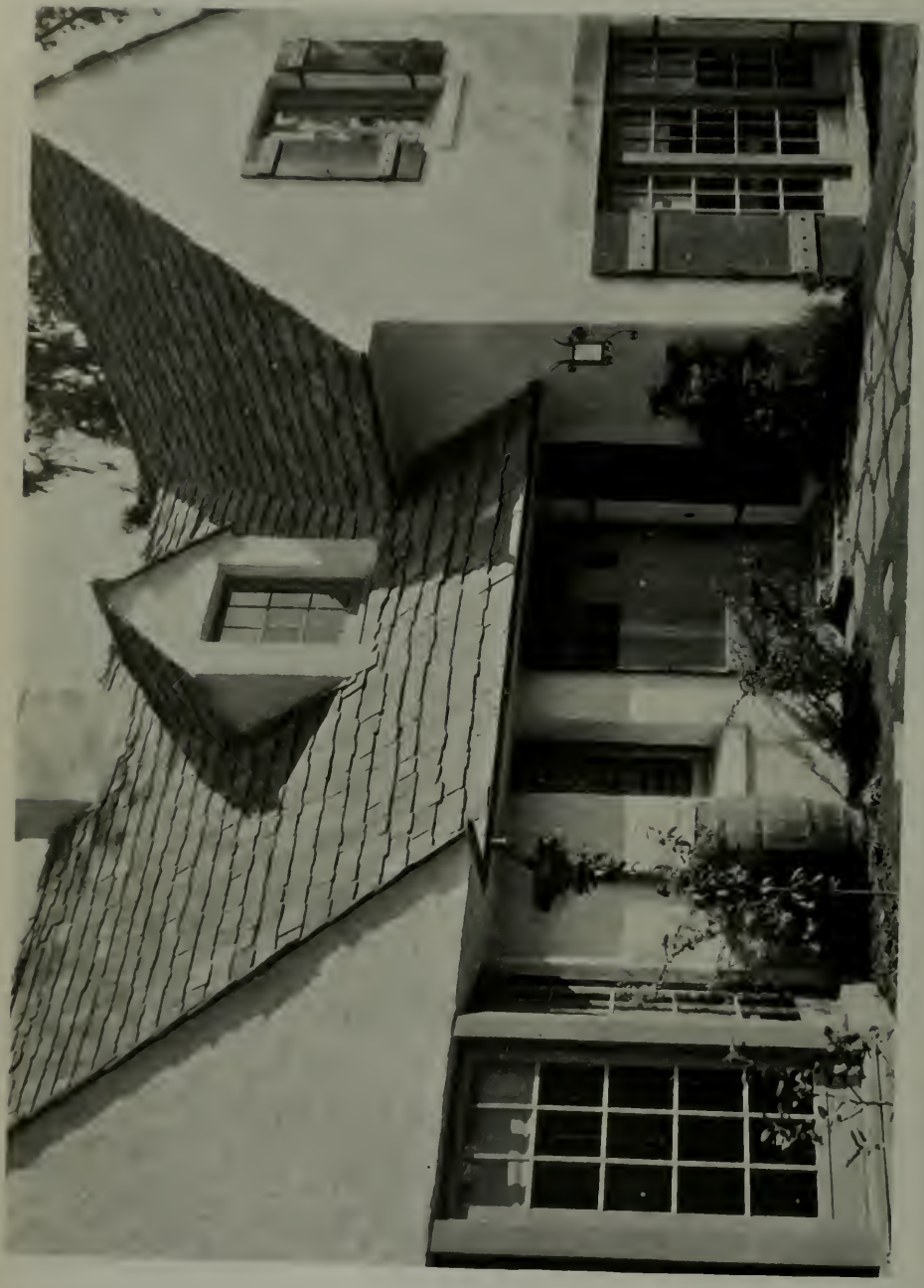


FIRST FLOOR PLAN, WEST GATE PARK COMPANY, SAN FRANCISCO
Masten and Hurd, Architects

HOUSE OF MRS. C. B. EDWARDS, ST. FRANCIS WOOD, SAN FRANCISCO
Masten and Hurd, Architects



FIRST FLOOR PLAN, HOUSE OF MRS. C. B. EDWARDS
Masten and Hurd, Architects



HOUSE OF MRS. C. B. EDWARDS, SAN FRANCISCO
MASTEN AND HURD,
ARCHITECTS

HOUSE OF MRS. C. B. EDWARDS, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF MRS. C. B. EDWARDS, SAN FRANCISCO
Masten and Hurd, Architects

HOUSE OF MRS. C. B. EDWARDS, SAN FRANCISCO
Masten and Hurd, Architects

HOUSE OF MRS. C. B. EDWARDS, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF J. ARTHUR SNOWDEN, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

GARDEN VIEW, HOUSE OF J. ARTHUR SNOWDEN
MASTEN AND HURD, ARCHITECTS

GARDEN, HOUSE OF J. ARTHUR SNOWDEN
MASTEN AND HURD,
ARCHITECTS

HOUSE OF J. ARTHUR SNOWDEN, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE FOR J. LOCKE BREAUX, SAN FRANCISCO
MASTEN AND HURD,
ARCHITECTS

HOUSE OF W. B. SWETT, ST. FRANCIS WOOD
MASTEN AND HURD, ARCHITECTS

HOUSE OF W. B. SWETT. ST. FRANCIS WOOD
MASTEN AND HURD. ARCHITECTS

HOUSE OF DR. R. A. REYNOLDS, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

GROUP OF ST. FRANCIS WOOD HOMES
MASTEN AND HURD, ARCHITECTS

HOUSE FOR H. N. McEWEN, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF H. N. McEWEN, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE FOR J. A. HATTER, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF J. A. HATTER, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF F. E. BRISBANE, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

HOUSE OF R. M. TAYLOR, SAN FRANCISCO
MASTEN AND HURD, ARCHITECTS

DEL REY CLUB, BERKELEY, CALIFORNIA
MASTEN AND HURD, ARCHITECTS

DEL REY CLUB, BERKELEY, CALIFORNIA
MASTEN AND HURD, ARCHITECTS

ENTRANCE, TAU KAPPA EPSILON, BERKELEY
MASTEN AND HURD, ARCHITECTS

TAU KAPPA EPSILON HOUSE, BERKELEY
MASTEN AND HURD, ARCHITECTS

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COMMUNITY INTERESTS

CITY and REGIONAL PLANNING

By Louis C. Mullgardt JAIA

CITIES must have been towns; towns villages. Each in degree matured consistent with opportunity, brains, energy. Sometimes a village never becomes a town, nor town a city. Ponderous plans for great cities and things, where villages and farms are, do interest villagers just as much as designating small boys future governors or something else great. Creating great plans for years far ahead is fascinating to do and to behold. Uphappily such long-distance plans usually acquire an obsolescent fade.

Progress, like the sun, shines always, although not everywhere at all times. It alters future conditions beyond present-day knowledge. Each era prefers to designate that which it believes the work of some succeeding era; each era has its own urgent work to perform, but usually elects to proscrastinate, thereby wasting present-day energy and clouding essentials of the time.

Real progress invariably embraces change; it is a finished product befitting to time present. Discarding the obsolete and perfecting live issues is real progress. Lapse of time makes great plans small; progress during an era tends to vitiate early preconceptions.

Community growth must embody change; a village or town disappeared where a city is. A progressive city constantly changes itself; the most important element toward progress.

A perfect city would be one in which its citizens would fulfill every immediate need; mankind prefers to skim over actual essentials and point out rainbow visions of an inaccessible future.

Thoroughfares and highways such as lower Market street and Junipero Serra are only two examples of innumerable similarly congested avenues; one with railway cars, the other too narrow and badly paved. Pride over Municipal Railway profits seems to leave Market street defiled as it is. Deriding Cemetery Associations because of the "bottleneck" makes one overlook the fact that the city's Junipero Serra boulevard is a main artery which leads into the bottleneck and that it is in even worse condition than the bottleneck. It requires neither genius nor colossal sums to correct such palpable neglect. Why talk about great plans for a future era in the face of such incriminating evidence of inexcusable proscrastination, relative to present-day common essentials upon which life, protection of properties and progress of state and communities depend.

Best state highways are found where least traffic is; the worst are adjacent to towns and cities where most traffic is. It does not require profound scientific knowledge and elaborate planning or great expenditure of road-tax funds to widen congested sections of highways which the majority taxpayers use.

Remote highways are being extended lavishly whereas really important highways which receive major traffic are left too narrow and are also too frequently in urgent need of repair. That falacious system is followed from year to year and can be stopped immediately if given but a small fraction of that perpetual attention which is being devoted to theoretical subjects by civic organizations.

State highway taxes should include maintenance of continuous highways through towns and cities; otherwise around them. It is unjust to impose costs incident to state traffic upon communities. Small communities are compelled to bear much more than an equalized proportion of such expenditure; that accounts for the exceptionally bad condition of those sections of highways which extend through towns and villages. State highways should be continuous; not in broken links.

Main arteries which lead in and out of cities from each district and connecting with state highways are vitally necessary and easily acquired. For example, consider San Francisco's Junipero Serra, Portola and Corbett roads being jointly developed a main artery leading into the upper end of Market street. To widen and perfect these roadways and to give its entire length a single name requires no science, minimum investment and will give to San Francisco that which has been a crying need during all of these years of neglect. Such work results in progress that is immediate, without the need for elaborate planning and extravagant alterations. That is much more important than extending municipal railways into homeless suburbs and will cost but a small fraction of railway investment.

Other chains of existing streets which will connect with state highways should be developed into single thoroughfares in the same manner and at the same time to solve the Chinese puzzle of getting in and out of San Francisco. It will relieve traffic congestion and aid immensely toward making San Francisco look more like a well-managed, progressive city.

Most sidewalks are needlessly wide. Diminishing widths of walks to widen streets entails least cost and is most valuable to the community. It spells immediate progress, requiring no science or elaborate planning.

Street railways congest all traffic more than any other item, including itself. Cities will abandon steel wheels and tracks for rubber tires and fine roadways ultimately, when logic prevails. That method is being rapidly inaugurated in other cities. It is being hampered by railway franchises, colossal investments in existing systems and lack of clear vision. To install the modern method requires no science or elaborate planning.

Overhead roadways for automobile traffic only is inevitable wherever traffic congestion cannot be otherwise relieved. Overheads entail least expense and minimum time to construct. They can be erected without hindrance to present traffic. They will not diminish daylight or ventilation to streets or adjoining buildings; but will in most instances increase second-floor values, by means of connecting them with the overheads. Chicago has made an imposing beginning, having constructed an overhead on a thoroughfare which is to be flanked with new buildings of pronounced architectural achievement.

Tunnels constitute the most expensive form of construction. They are repeatedly advocated even though other means are available. Unless we begin a vigorous campaign of protest now and keep it up, San Francisco will find itself in the throes of building abominable tunnels in the

downtown district, below sea level, at fabulous cost. An earthquake like the one of 1906 would probably fracture it in several places to let the seawater in before many could escape. Monoxide gas is heavier than air; automobiles create it. Traffic would be heavy in downtown tunnels, causing quantities of poisonous gas to lodge there and be unavoidably inhaled by those who pass through. Where tunnels are left open at the top, the voids and railing take up more space than is gained by the tunnel road. Building tunnels is only excusable when every other means is preclusive.

A bridge will be built between the bay cities. There has been much arrogant opposition from various sources which is likely to continue and cause further delay to this glorious opportunity, such as no other cities in the whole world have; but a bridge approach at Hunters Point would necessitate a drive approximately five miles long from Market street; that drive alone would consume about as much time as it now takes to cross on a ferry. Greatest stretch of imagination still precludes visualizing San Francisco's main traffic to Oakland and other east-bay cites going south five miles or more to Hunters Point and then to Oakland, when ferries at the foot of Market street will offer much better facilities than they are obliged to now, to get patronage.

Any and every proposal to place the bridge approach remote to existing main traffic, offers partial failure and possible disaster. Admitting for the moment a bridge would be amply patronized at some remote point of entrance, in that event traffic would become elongated without becoming attentuated by such enforced treking.

It has always been customary to place bridge approaches nearest to points of greatest demand. Brooklyn bridge approaches, Eads bridge approaches were placed where traffic had been established before they were built. There has never been a logical argument presented against that firmly established principle. San Francisco would have a monumental folly, if its bridge approaches were situated five miles south of Market street. Bridge approaches would, as a matter of fact, be fan-shaped; each approach would extend into a thoroughfare of its own, thereby precluding all possibility of traffic congestion at any one point. Approaches may be extended into the city in every direction and to any distance; they would, of course, be overhead approaches, the gradients of which would be situated within city blocks, thereby leaving existing streets unmolested. The approaches would be monumental in design. It is not necessary to continue disfiguring the Embarcadero with structural monstrosities. The main entrance to our city may be made valuable with structures which possess architectural charm. Good design has always shown to be an asset. A bridge without attributes of beauty would be a permanent blight on the bay cities. A bay bridge will constitute the world's largest structure; it remains to be seen whether it is designed to look like an engineering monstrosity or an architectural monument.

Any bridge which does not admit of additional roadways being added in future, thereby making two or more bridges in one, is inadequate and therefore imperfect. A splendid bridge, correctly located, will attract and multiply its own traffic in a few years; it will place the bay cities on the road to progress to a far greater degree than could be brought about by any other means.

Limitation of building heights has been much palavered over during the last few years. City planning persons are popping up like mush-

rooms. Most civic organizations have city planning committees whose members are of all walks, including doctors, lawyers, dressmakers and hatters; each airs opinions on city planning with admirable confidence, not realizing that they are retarding progress, taking up a lot of time being heard, and a quantity of paper, ink and patience having their opinions recorded.

Chicago has recently canceled all restrictions on building heights. It would be a tragic retardment on San Francisco's progress if some of these proposed obsolete resolutions become a part of its building ordiance; more especially the one restricting heights of buildings other than on basis of width of street angulation and set-backs. San Francisco's buildings and skyline will become most attractive under modern American provisions, such as have been invented by American architects. We must be careful to guard the city at this time against the invasion of a little knowledge gained through travel abroad; the old and new academician will get San Francisco building laws converted to prosaic ideals in the near future, unless sufficient opposition is called out to defeat that object.

Childrens' playgrounds near schools are very essential; not parks, other than Golden Gate and those which exist, which are sufficient for San Francisco. Small parks constitute loafers and rubbish resorts, which makes them objectionable. Playgrounds answer every need and are under supervision. The beach is also a fine playground, and reasonably accessible. The automobile is now used most extensively for outings. Golf links are in some respects substitutes for parks. Lincoln park has become a golf links as well as park, and children's playground. We are living in the beginning of a new era in which there are many transitions into ways that are clearly superior. The strollers' park is obsolete; the stroller is now a golfer, the park is now a links, also a children's playgrounds.

San Francisco's sea front is a beautiful stretch of beach several miles long, undeveloped, except poorly here and there. The salt pipe line pier is a disfigurement. The pipe line should have been submerged and terminated with an attractive lighthouse. The long stretch of elevated road is an enigma, being raised above natural grade. Windbreaks having occasional vistas should be planted in double rows along the entire length of a proper drive, as a first item. Sea-front properties will attain great value. The sea front will become renowned for its magnificent hotels, apartments, clubs and other imposing structures and plantings. The soil is alluvial, it comes out of the Sacramento, then deposited on the beach by the seawaves and blown inland by the trade winds. It is rich like the soil of Golden Gate park. The sea front presents a wonderful vista; the trade winds are absolutely pure and wholesome. It will be made a wonderful place to live. A stately beginning will be a pronounced financial success, and speedily followed by many other imposing structures.

Vigilance work by private citizens who know what to look out for, would result in greatest benefit to commonwealth. Vigilance eternal is the only assurance against errors, omissions and dishonesty. Vigilance is constantly applied to every private business project, whereas commonwealth business and funds are entrusted entirely to political machinery, without ownership vigilance: namely, vigilance representing the public.

Civic organizations are very numerous; their membership includes about every individual citizen who is qualified to perform expert vig-

ilance service relative to commonwealth business. This is not being done; everything is entrusted to political machinery. Protests, when they do come, are usually too late, and then only from newspapers direct, instead of from public-spirited organizations.

Civic organizations should co-ordinate their efforts in the establishment of perpetual vigilance service relative to all commonwealth projects and work under way. To understand issues of the day promptly provides for prompt action if action is necessary. The establishment of a vigilance system that is independent of political machinery will have a most salutary influence against errors, omissions and dishonesty; such as are commonly protested against by the newspapers only. It is the duty of public citizenship to do its own vigilance work relative to its own properties. Civic organizations profess unalloyed interest in all things which affect the commonwealth; all experts and necessary funds are within their realm; they can put vigilance machinery into action as speedily and effectually as any other enterprise can; it is their prerogative and solemn duty to provide efficient vigilance service. Politicians profess faithful servitude to the commonwealth, but they are permitted to do whatever they please; they are, in fact, masters not servants of the public; they perform their own vigilance work in a manner which usually insures the fulfilment of their own desires, before the public knows what its masters have done to it. The protests which follow are expected, but they come too late. The public must do its own vigilance work to insure the right sort of progress, honestly and economically performed.

STORE BUILDING, PALO ALTO, CALIFORNIA
JOHN K. BRANNER, ARCHITECT

RESIDENCE OF MRS. OSCAR [illegible]

The revival of this ancient art will be told in The Architect and Engineer for January

FIREPLACE IN SGRAFFITTO
S. PÉLENC. DECORATOR

A PORTFOLIO OF INTERIORS OF CHVRCHES IN MEXICO

Photographs Taken by
Geo. L. Mc Crea, Architect.
Oakland, California.

CHURCH AT XOCHIMILCO

INTERIOR, CHURCH AT XOCHIMILCO

CHURCH, CELAYA

CHURCH, QUERETARO

CHURCH, CITY OF MEXICO

CATHEDRAL OF CHIHUAHUA

CHURCH IN CITY OF MEXICO

CHURCH, MAZATLAN

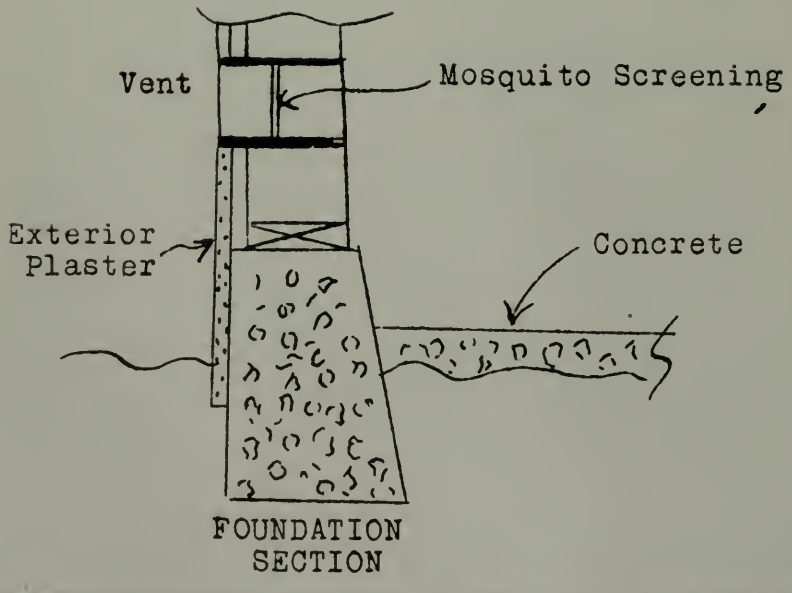
ARCHITECTS and BUILDERS SHOULD USE PRECAUTIONARY MEASURES TO PREVENT DAMAGE BY TERMITES

A SAN FRANCISCO architect who is temporarily residing in Los Gatos, Santa Clara county, has forwarded to The Architect and Engineer the following copy of a letter which he recently addressed to his clients residing in various parts of the state of California:

"A few weeks ago my attention was called to the press reports of damage done by termites at Pasadena. About the same time I discovered that papers which had been stored in a shed at Los Gatos had been attacked by some insects resembling ants. Upon submitting specimens to Professor Van Dyke of the Department of Entomology and to Professor Light of the Department of Zoology of the University of California, I was advised that they were termites, or white ants, more specifically 'of the genus Reteculitermes, presumably R. hesperus.' While these insects are not quite the same as the tropical termites, they are related to them and are addicted to the same wood-eating vice. I am therefore sending all of my former clients a letter directing attention to the necessity for taking preventive measures against these pests—where the expense of such measures is not too great. While the chance of injury to your building at present is perhaps about the same as that of its being struck by lightning, the enclosed photograph (see Fig. 1) shows that they can work very serious damage to a building—damage which cannot be covered by insurance; and in many cases the preventive measures are very simple and inexpensive.

"The above mentioned scientists of the University of California and the U. S. Bureau of Entomology have advised me that the secret of combatting the subterranean type of termite (which is the kind to be feared in building construction) is to insulate all interior timbers from the ground by means of concrete. These termites shun the light and require a 'ground connection.' It has been my practice whenever possible to cement the floor or 'rat-proof' the entire area under my buildings with a thin layer of concrete; in such buildings, when finished with cement stucco outside, it will only be necessary to make sure that there are no holes or large cracks in the rat-proofing and to screen all vents into the space under the first floor with fine mosquito netting of bronze or monel metal. Fly-screening will not help as it is not fine enough in mesh. Basement doors or windows which are in regular use need not be so protected, as the termites keep to dark, moist places. The ones with which I have had experience seem to be troubled with guilty consciences and scurry for cover whenever disturbed at their work or exposed to light. In buildings which have not been rat-proofed or which have been finished outside with wood, the best protective measures would probably be to inspect the basement and foundation timbers carefully to see that there were no termites at work and then to give all the wood

FIG. 1—DAMAGE DONE BY TERMITES TO A CALIFORNIA BUILDING



SUGGESTION FOR BUILDING FOUNDATION TO PROTECT FLOORS FROM TERMITES

within a foot of the ground several coats of creosote; the building should then be examined every year and any damaged material should be promptly replaced by treated timber. Whenever possible rat-proofing should be used not only because it will help to exclude rodents and termites, but will also keep ground moisture out of the house.

"An interesting account of the American termites is to be found in the U. S. Department of Agriculture Farmers Bulletin No. 1472, obtainable from the Superintendent of Documents, Washington, D. C. It seems that there is no foundation for the popular notion that the termites are undesirable aliens, imported from the tropics. All white ants which have been observed in California are natives; they have been leading a quiet life in our forests for many years and only turned their attention to buildings when the destruction of the forests curtailed their natural food supply.

"While my investigations have been far from thorough, the information which I have gathered would indicate that there is at present no occasion for alarm regarding termites; at the same time there is no excuse for the San Francisco papers stating that they are 'practically harmless,' and when such simple measures as the placing of mosquito netting in the basement vents and the sealing of cracks and holes in the rat-proofing will give protection against the pests, it seems unwise to neglect to take this 'ounce of prevention.' ".

* * * *

Professor T. E. Snyder, specialist in the Bureau of Entomology, United States Department of Agriculture, in a Bulletin on the subject of "Preventing Damage by Termites or White Ants," states that 42 species occur in the United States, but are most numerous in the Southern, Southwestern and Pacific Coast regions. The termite is known to have reached the third story of some structures by boring through wooden beams imbedded in the surface, worked its way up to flooring by a complete wood route or by bridging a concrete gap with a self-constructed shelter tunnel of earth, and continued its climb through panels and other wood trimmings.

One cabinet member and several senators who have homes in Washington are known to have exhibited their wrath recently because of the termite's penchant for making trysting places out of their cellars. The bug has also invaded the sacred precincts of the Capitol building, where it bored under the Senate document room and indiscriminately helped itself to a meal of such precious papers as Jefferson's Manual on the Constitution and the Rules of the House of Representatives.

The Bureau of Engraving and Printing, largest and most modernly equipped printing plant in the world, has been another sufferer, postage stamps, dollar bills and special Liberty-bond paper being damaged, while the National Museum, the old museum and engraving and printing buildings, the Congressional Library, the Bureau of Standards and all the temporary Federal structures still standing in Washington as grim reminders of the great war have been visited by the pest. Recently it was necessary to spend $25,000 on one of the temporary Federal structures to repair termite damage.

Mr. Snyder points to the depredations as serious to many classes of crude and finished forest products and as occasionally serious to living trees and other plants. They are especially injurious to foundation timbers, the woodwork of buildings and material stores in buildings to which they have gained entrance, he says.

As for prevention measures, he declares that the woodwork of build-

ings can be protected from the attack of termites by proper construction and by use of wood treated with preservatives. The trouble-maker also can be vanquished where already established in foundations by removing wood in contact with the ground and replacing it with wood chemically treated. He further urges:

Construction of buildings so that they will be white-ant-proof by making their foundations, where possible, entirely of stone, brick or concrete, including stone or metal columns or pillars in the basement to support the floor above; by making concrete walls and flooring in the basement or cellar, and by laying concrete floors on a gravel base. Where stone or concrete foundations are impracticable, the use of timber impregnated with coal-tar creosote is urged.

Laying of basement window sills and frames over concrete, without letting the woodwork touch the soil, also is urged. Never sink untreated timber in the ground or in moist concrete, Mr. Snyder says, adding that complete dryness of the foundation and of the basement walls and flooring is an important means of rendering buildings safe from attack. Provision also should be made for spaces between the ground and wooden flooring for air.

PEN-AND-INK SKETCH BY ROGER BLAINE

A UNIQUE NORMAN COTTAGE
AT PORTLAND, OREGON.
Lucius & Cash Architects

AN experiment absolutely unique in the history of building construction in this country is being carried out by the Western Pine Manufacturers' Association at Portland, Ore. Crowning the peak of a hill that dominates the bustling business section of that city, only a few moments removed by motor, is a new and splendid home designed by architects who have dug deep into their years of travel experience to create an English type cottage with touches chosen from the most picturesque of foreign types.

It is the Association's model dwelling—Pondosa Pine Cottage—occupied by a prominent Portland contractor as his home, but dedicated by its builders as a thoroughly modern laboratory where the benefits of Pondosa pine can be strikingly set forth, and its behavior under actual conditions of use accurately observed and checked as well.

Rough dressed bungalow siding of pine enters into the wall construction, mingled with just sufficient native lava rock and stucco to make a harmonious building strictly in keeping with its rugged, picturesque setting. It is only when one enters the cottage, with its hand-hewn beams and plank doors that the full significance of its creation is realized. And this studied restraint in the use of a dominant material, for the sake of architectural charm, alone is sufficient to impress the visitor with the unusual character of this undertaking.

As one enters the small front gate that is hinged to the turret of an attractive street-level garage, he climbs up a winding pathway of undressed native flagstones, past a spring-fed pool where lilies nod, and comes face to face with the baronial entrance to the cottage. Faithfully designed in the style of an early English period, when the Norman influence still was strongly felt, its turreted boulder walls and impressively mounted door of solid slabs seem to bid defiance to the elements and the enemies of its lord.

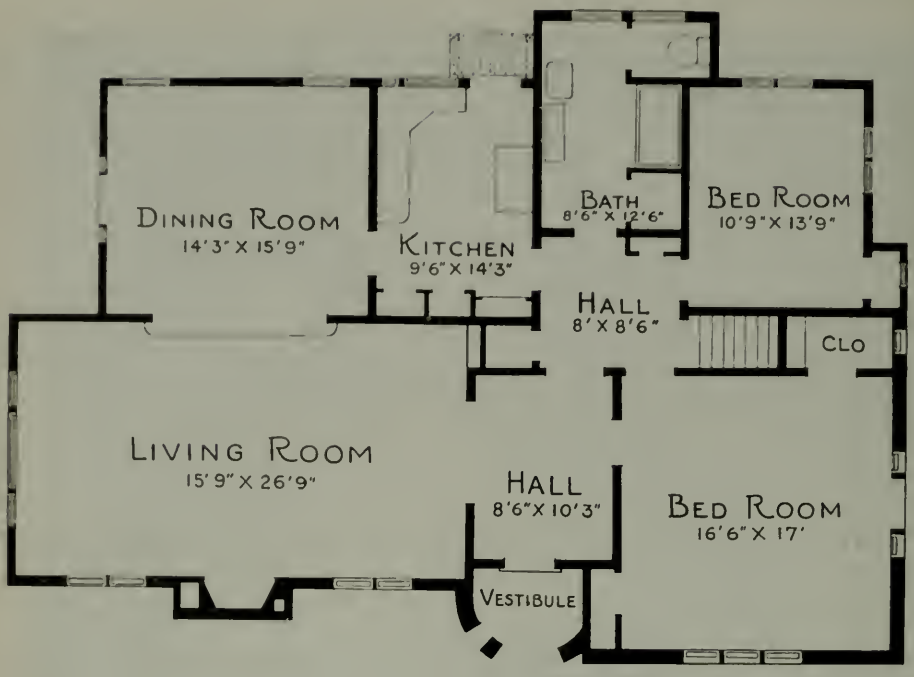
Passing into the entrance hall, the visitor notes that an almost monastic severity marks its treatment. From the floor of hand-made quarry tile, to the vaulted ceiling with its rough trowel finish, this hallway is in complete accord with the medieval English motif set by the grilled entrance door fashioned from heavy planks of Pondosa pine. Set over the doorway is an old English sheep bell, fastened to a hand-wrought iron frame and fitted to announce the arrival of the mysterious "Black Knight" himself.

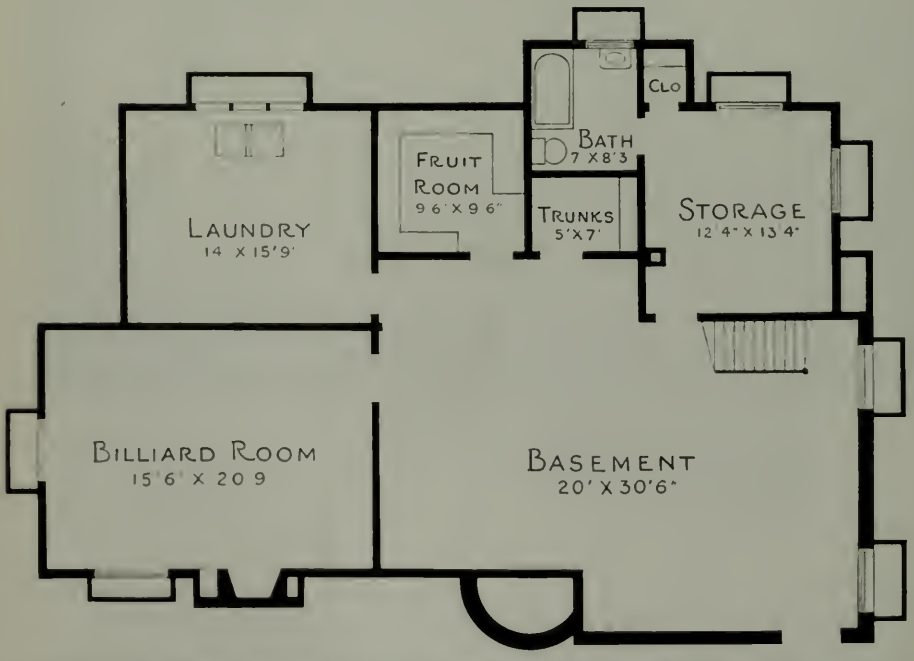
To the left, from the entrance hall, one steps into an 18x30 living room, the ceiling of which is chapeled sixteen feet high, supported by hand-hewn Larch beams and covered solid with Pondosa pine. The floor is of wide, crude oak planking, mortised and pegged with large cracks between each board. The building throughout is mortised and pegged, with but very few nails used in its construction.

From the living room, a short flight of two steps leads into the dining room with its slate tile floor. Here the side walls are of texture

MODEL NORMAN COTTAGE, PORTLAND, OREGON
LUCIUS AND CASH, ARCHITECTS

MODEL NORMAN COTTAGE, PORTLAND, OREGON
LUCIUS AND CASH, ARCHITECTS





FIRST FLOOR AND BASEMENT PLANS, MODEL NORMAN COTTAGE, PORTLAND, OREGON

plaster, with the end walls of full-paneled pine. Carrying out the rugged motif of the entrance proper, an electric fixture of hand-wrought iron depends from the center of this ceiling, which has two heavy, hand-hewn Larch beams through the middle and half, hand-hewn beams at either end.

Stepping out of the dining room, the visitor enters onto a special view terrace from which is to be had a compelling panorama of the entire city of Portland—one of the most magnificent scenes vouchsafed the traveler at any spot in the world.

Directly down below the bystander's feet loom the tall business buildings of a bustling metropolis, glistening white in the sun-drenched air. As the vision lengthens, one traces the winding path of the Willamette river as it lazes its way down to join the broad Columbia in a dignified dash for the sea. Out against the blue of the sky, Mount St. Helens and the famed Mount Hood rear their jagged, snow-capped, sentinel peaks; while directly in the foreground the gleaming tip of Mount Adams is a glittering, snow-white jewel that has received a perfect setting.

Passing again into the house, one inspects a model kitchen finished in white enamel and equipped with every electrical convenience as well as unusually ample cupboard space. Here the way now leads into a spacious back hall that connects with an inviting bath and two restfully finished bedrooms before descending a flight of steps into the partitioned basement.

From the basement a tunnel leads on a slight grade down through the double garage to the street.

Plans for this model cottage were prepared by Architects Lucius and Cash. The cost was held rigidly within range of the average home owner in order that he might be able to take full advantage of the many exceptional features this model home offers.

proposed budget for building.

IDEAS for THEATRE STAGES

By

Daniel Jitzkee.

ARTICLE III

AFTER the asbestos curtain, the next thing we have to consider is the front curtain. Nowadays these curtains usually operate on a sloat, so that they may be draped from side to side, in addition to the sloat being put on a set of lines in order to lift the curtain straight up.

While on this subject I might caution you to be careful about specifying curtains to braille or drape up to the corners. I have seen this attempted where the curtain was entirely too heavy to consider such a thing.

I am going into the subject of counter-weighted sets a little further along, so I shall take up the subject of sloats now:

There are so many mistaken theories about sloats that I think it would be a good thing to go into a little history:

The sloat is that part of the stage equipment upon which travels the drapery curtains as they drape off to the sides. It is sometimes called a track or a trawler or a traveler—for practical purposes they mean the same thing, however.

This piece of equipment is important because it gets constant hard usage, and must be built to stand up under service.

The first sloat was a rather crude affair, consisting of two wires upon which slid rings which were secured to the top of the curtain. One of the biggest disadvantages with it was the inevitable sag of the wires. Then gas-pipe was tried, but this also was impractical, except on very short stretches.

The modern sloat first came into use with a double maple track upon which slid small hardwood blocks. The lap was gained by lapping the sloat in the center. Following this a hardwood ball was substituted, traveling between two beveled tracks—the ball obviously presenting less surface for friction. It was found that the ball would twist and turn as it slid along the groove, resultingly twisting up the curtain at the top. Then instead of snapping the curtain to a screw-eye imbedded into the ball, there was substituted a wire eye which swiveled loosely. This was some improvement but it did not prevent the balls from climbing over each other and getting otherwise tangled up. Then a hole was drilled laterally through the ball, and all of the balls were strung on a wire. In this arrangement the balls rode the wooden track but the taut wire prevented their twisting and climbing.

In the meantime, in other models the sliding block principle was still used but a brass block was substituted for the wood.

Improvement followed in the ball-wire combination when a double track was substituted for the single track at the center.

Then an ingenious engineer conceived an arrangement of lapping leaders which accomplished the necessary lap but eliminated the necessity of the double slot or lapping the track. This made the sloat more compact.

Later another engineer made the obvious improvement of discarding the sliding principle entirely. He put wheels on each side of the

block, combining it with the single track leader idea. This was a decided improvement, as he eliminated all of the sliding friction and resistance—or, in other words, he changed the principle from that of a sled to a wagon.

Let's go into a little engineering data before we go further. Experiment has shown (see "Friction" by T. E. Stanton, superintendent of the engineering department of the National Laboratories, page 138) the following solid frictional coefficients of the various materials concerned in our discussion.

Wood on wood	.5
Metal on wood	.6
Metal on metal	.25

These figures are for unlubricated surfaces. Illustrating this: a ten-pound weight sliding on wooden track on a wooden block would have five pounds of frictional resistance. This same weight on a metal block sliding on a wooden track would have six pounds resistance. Yet the metal sliding on a metal track would only offer two and one-half pounds resistance.

By adding the wheel, then, this engineer achieved a metal on a metal contact—the frictional resistance in this case being transferred from the track proper to the pinion and bearing of the wheel. He thereby reduced resistance one-half. But by adding the wheel he gained also a leverage on this frictional resistance, represented in the radius of the wheel as the lever with the radius of the bearing marking the fulcrum point. A ratio of at least 8 to 1. A total reduction—ignoring lubrication—was accomplished to one-sixteenth the original effort required to move the curtain, as well as reducing the wear, were the materials of the same hardness, by one-half. But metals like steel, phosphor bronze and so on are infinitely more hard than maple.

This started the whole movement towards sloats operating on wheels. One sloat operated on fibre wheels, another operated on rubber-tired wheels. A New York manufacturer constructed the entire sloat, except the housing, of brass. He differed from all the rest in that his sloat folded up after it was off-stage. The only objection to this sloat was that it was noisy, and much more expensive than any other.

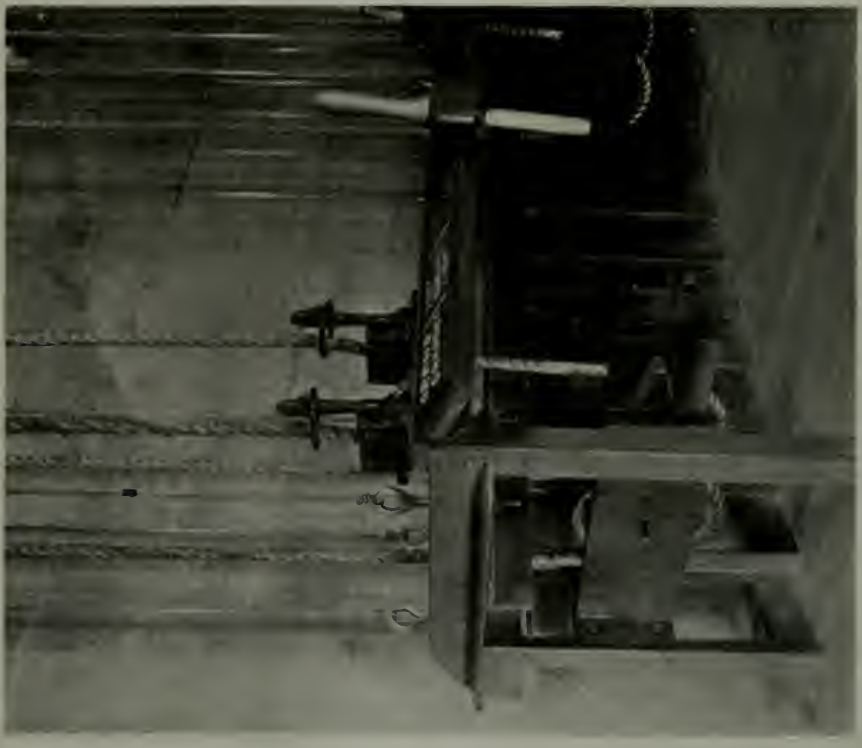
Yet one serious drawback still remained. This was the fact that as the curtain was drawn off-stage the leader engaged the trawlers one by one, causing a gradual increase in the frictional resistance until the leader was pushing all of the trawlers. It is not an uncommon occurrence to find a sloat sticking in this way.

Then, back in Waterloo, Iowa, the Perkins Curtain Carrier was invented. Mr. Perkins used the wheel principle, but made the wheel ball-bearing. He further added the lazy-tongs principle—like an extension telephone rack—which resulted in the trawlers all drawing gradually together as the curtain was pulled off-stage. The entire sloat was constructed of steel.

In my opinion, this is one of the best sloats manufactured, because it is silent, enduring, easy to operate and practically fool-proof. There are few, however, in use on the Pacific Coast.

Summing it all up, common sense will tell you that the wheel principle sloat is the only improved principle to consider. Any of the wheel type sloats is better than any sliding sloat. Lubrication reduces any of the principles by a certain percentage. One lubricant reduces any of them to 33 1/3 per cent of the original values. Thus a hundred-pound curtain on the lubricated wooden trawler sloat would require a 15 2/3-

OLD FASHIONED PIN RAIL



COUNTERWEIGHT SYSTEM PIN RAIL

pound pull; the metal trawler on wood would require a 20-pound pull; and the wheel type would require an 8 1/3-pound pull, but with the leverage principle this is further reduced to about one pound.

In my previous article I explained the basic principle of the three- and four-line sets of rigging. To eliminate the necessity of "beefing" the total weight up to the gridiron, the drops were counterweighted with sand bags.

From this, and because of other advantages, came what is known as the counterweight system.

Roughly, this system is practically the same as the old line set, except that cast steel cable is substituted for the rope—it not being affected by atmospheric conditions, and also being infinitely more long-lived than the Manila rope. The ends of the cable are brought down to a curtain clew, and this in turn is secured to a counterweight arbor. The whole assembly being much in type like that for the asbestos curtain rigging.

The usual counterweight system consists of a three-or four-line set. Attached to this set is a 1½-or 1¼-inch pipe batten. The drop is in turn secured to this pipe batten, rather than directly to the lines, as in the old system. Several types of automatic trimming devices have been devised to eliminate the necessity of adjusting the hang of these drops.

The first advantage in the counterweight system, then, is that once hung, a drop stays "put." The next advantage is the safety. The quarter-inch cable, almost universally used in this type of equipment, outlasts rope three times. You never untie this type of equipment, therefore there is a little danger of its falling. Iron counterweights, hung on iron arbors, eliminate the danger of sand bags falling off. A serious accident happened in a San Francisco theatre from this cause only a few months ago. Since the sets are at all times counterweighted, there is no chance for anyone to untie the wrong rope, and find himself jerked swiftly to the gridiron by a much heavier weight. Many accidents have been caused by this.

The next advantage is that the entire assembly is much neater and clearer-cut than the old type with loose rope ends hanging. Examine the close-up photographs of the old-fashioned pin rail and counterweight control systems.

Most counterweight systems differ primarily in the system of counterweight guides.

All of them start with the pipe batten, also all of them use a quarter-inch cast steel cable running over eight-inch common or roller bearing blocks. Thence, they go over a head or lead block. In most systems the lead block contains larger sheaves, with the endless line sheave built in. All of them bring their lines to a clew secured to a counterweight arbor.

But here is where they materially differ: Some of them have wire guides for the counterweight. Others—this is the more expensive kind—have guides made of steel track built right into the wall. Some of them have a single track on the wall side only—the weight sliding at right angles to the wall. Others have a double track, the weight still at right angles.

They all operate from a Manila hand line which is kept taut by a tensioning sheave on the floor. The tensioning sheave is another point of difference. Almost all of them control this hand-line by means of a rope clamp mounted on a rail.

Almost invariably, though, the architect will have to prepare especially for the particular type of counterweighted system he is going to use—just as he prepares his gridiron slots and strong-backs for the blocks in use today. The best plan in this case is to interview engineers selling the respective types of equipment and get the good points—and, incidentally, comparative prices. Decide upon one of them, and specify it. But be sure you get the right one, as well as all measurements of special steel work that may have to be done.

Such measurements necessary usually include special beams for supporting the blocks, special drilling in the beams, rails for supporting the line clamps—and if a side wall slide is used it is absolutely imperative that full information be obtained for the spacing of the metal slides.

COUNTERWEIGHT SYSTEM

My private opinion on these systems is that any of them are much better than the old pin-rail system. The cheapest and most convenient—as far as special preparation goes—is the system using the wire guides. But be sure you have prepared in such a way that the tension on the wires will not pull up the floor! Several theatres in the bay district have found this happening.

You architects designing high school stages should pay special attention to the counterweighted system, as it is decidedly advantageous for school purposes because of safety assurance. I recall only a few months ago where a high school student narrowly escaped serious injury when he untied a drop too heavy for him. This system eliminates the necessity of operation from a high fly-gallery. Besides, these systems are fool-proof. I don't think there should be any rigging in a high school but counterweighted systems.

It isn't necessary to install sheaves larger than six or eight inches in diameter in the ordinary set of lines. Roller bearings are advisable, however. The average regulation drop and its batten and counterweight will run about four hundred and fifty pounds. A six-inch roller bearing block with first-class lubrication will offer 3.75 pounds frictional resistance with this load. Without lubrication it will offer 12.25 pounds resistance, and an average would show about 7.5 pounds. Compare this with the largest block designed for the operation of an asbestos curtain. We estimate the working load in this case at about 2400 pounds. The table follows:

		Frictional Resistance		
Size	Load	Well Lubricated	No Lubrication	Average
6-inch	460	3.75	12.25	7.5
8-inch	450	2.73	9.25	5.5
20-inch	2400	2.875	9.55	5.75

I insert these tables for what you may find them worth—I have complete tables of all sizes for those who may find them useful. This, I might add, is the first time such information has been published in this connection.

Summing things up as far as the gridiron equipment is concerned, let me emphasize the importance of determining the following before the blueprints are made:

1. Number of lines for asbestos curtain.
2. Placing of blocks, and assuring clearances for the asbestos curtain and counterweights and endless line.
3. Deciding upon loft and lead or head blocks to use, and checking measurements for placing beams.
4. If counterweighted system is used, all of the above under No. 3, plus determining method of counterweight guides and control rail.

One final admonition. Do not forget that it is necessary in every installation to put in several extra sets of lines in addition to those necessary to hanging the equipment purchased.

MULTIPLE DOME DAM

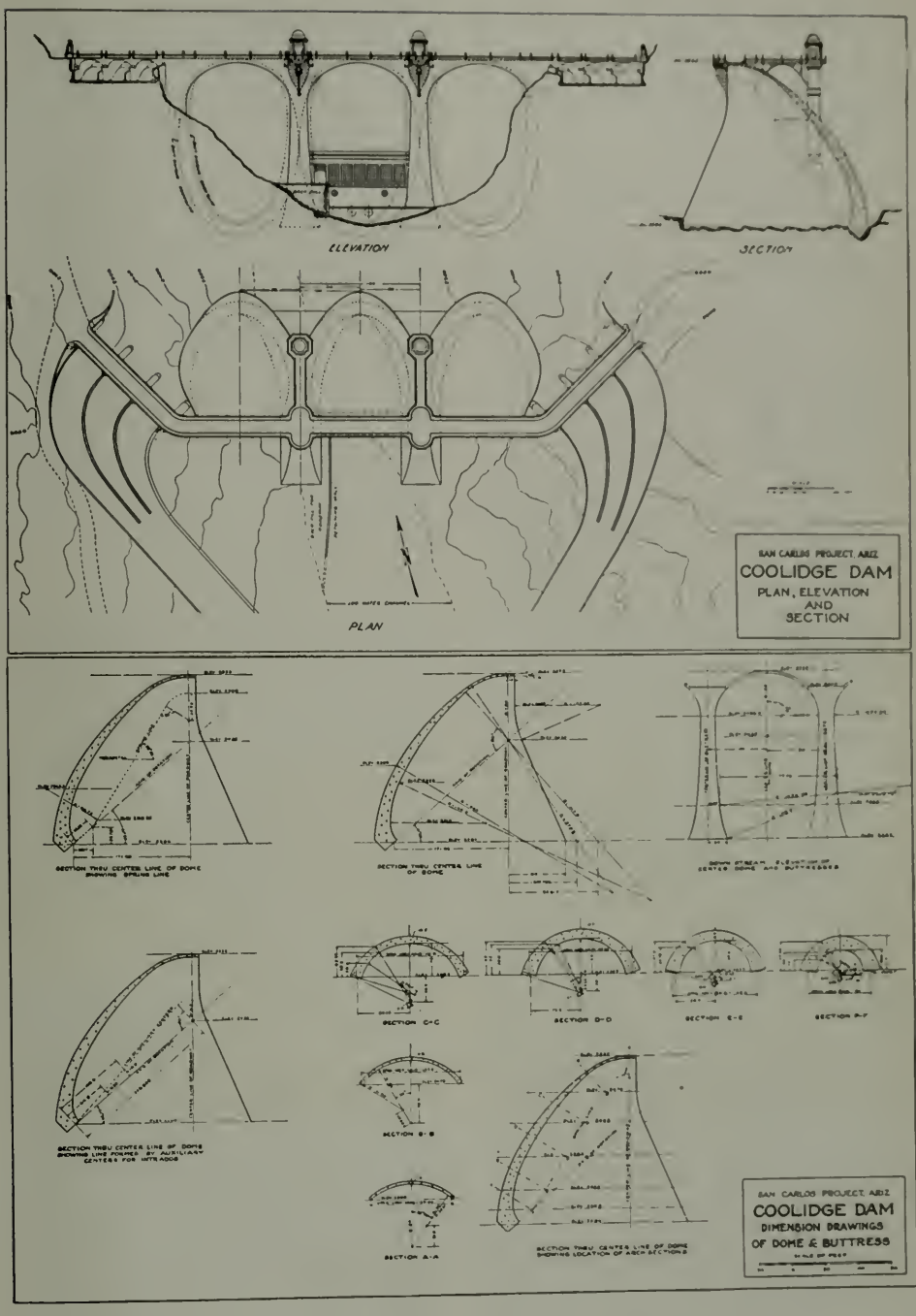
at San Carlos, Arizona.

THIS dam was designed for the San Carlos project in Arizona and will be officially known as the Coolidge dam, so named in honor of the President of the United States. In accordance with the present policy of the Department of the Interior to build all structures, where possible, by private contract in the interests of economy, bids have been taken and a contract has been awarded. The picture below is shown by courtesy of Southwest Contractor and Builder.

The site for the Coolidge dam is at the mouth of the Box Canyon of the Gila river, near San Carlos, Arizona. Water is to be impounded there for the irrigation of 100,000 acres, about equally divided be-

tween the Pima Indians of the Gila river Indian reservation and white owners of adjoining lands in the vicinity of Florence and Casa Grande, Pinal county.

In the design of the multiple dome dam at the Coolidge site three domes and two intermediate buttresses were employed. The maximum height of the dam is 250 feet and it rises 220 feet above the stream bed. The length of the dam or canyon width at the base is about 300 feet, while the distance along the crest is 580 feet exclusive of spillways. The spillways are each 150 feet in width. The distance from the rear of the dome along the base of the dam to the toe of the buttress is 286 feet. The clear span of the arch elements forming the dome vary from 70 feet at the heel to a maximum of 150 feet at the "shoulder" of the dome.



During the preparation of plans and estimates for the Coolidge dam the designers had the assistance of a board of consulting engineers consisting of L. C. Hill and F. A. Noetzli of Los Angeles, California, and the firm of Wright and Gentry, architects of Los Angeles and Long Beach, were secured to design the architectural treatment.

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DESIGNING OUR FEDERAL BUILDINGS

The fact that Congress has authorized considerable new construction work in Federal buildings throughout the United States, has prompted some of the chapters of the American Institute of Architects to enquire into the matter of preparing plans for these buildings. The results so far have not been very encouraging. It seems that there is a "Public Buildings Act"' which prevents the employment of private architects except in a limited capacity. The following clause is cited:

"When deemed by him advantageous, the Secretary of the Treasury is authorized, in special cases, to procure by contract the floor plans and designs of buildings developed sufficiently to serve as guides for the preparation of working drawings and specifications, or to employ advisory assistance involving design or engineering features."

It seems that some years ago in some of the larger cities, resident architectural firms were employed on Federal work. This, we understand, was done under the "Tarsney Act," which act has since been repealed. Consequently any work done locally under the present building program will have to be done under the provisions of the above quoted section of the Public Buildings Act of 1926. Not very encouraging for the local architects, we must say!

GOOD BUILDINGS IN DEMAND

The American Construction Council in its national survey of construction conditions, reports healthy activity in the building industry generally. The volume of operations points toward as great a total for the present year as for 1925, although there has been a slight seasonal recession and the situation is somewhat spotted in various parts of the country. The amount of work scheduled and contemplated for winter operations is very favorable.

The character of operations is of a much more substantial type than that of the past few years, showing an increased demand for better built and properly financed buildings which the American Construction Council has been advocating so strenuously since the setting in of the building boom in 1922. This is by far the healthiest situation that has existed in the building industry for some years, as there has been a very noticeable recession in new speculative buildings not backed up by adequate values, and a better class of business is coming upon the market.

The slowing down in housing construction further reflects a fa-

vorable trend, with an increasing demand for a higher class of apartments and hotels and of suburban homes, the need for which was emphasized during the peak period of indiscriminate house building the past few years.

Building operations in general show a larger percentage of structures for commercial and industrial purposes, public buildings and public utilities. There is a better supply of rentable space of good quality. Material prices and labor are reported fairly well stabilized with no apparent indication of any radical change in the near future. Labor productivity is increasing.

The great need continues for better conceived, better financed and better built buildings, accompanied by intelligent city, town and community planning not only as to building proper but also with regard to traffic conditions and health hazards. The public can now get, and should insist upon getting, full value for every dollar it puts into building.

"HOME-MADE" CHRISTMAS CARDS

The editor would like to receive Christmas cards from Architect and Engineer readers who design them themselves. Pen-and-ink drawings, pencil sketches or wash, reproduced in zinc or half-tone with appropriate lettering, offer a unique holiday greeting, and the idea is one which The Architect and Engineer thinks should be encouraged. Such a card means infinitely more to the sender's friends than the machine-made ones with stereotyped verse. Examples of cards will be published in this magazine with the permission of the authors.

THE CHARM OF MR. POLK'S WORK

The fine showing of the work of Willis Polk and Company's office in the November Architect and Engineer, was subject of no little favorable comment by friends and members of the profession. Mr. Polk's poetic interpretations of classic architecture are well known to all students of California architecture. Everything he touched had the intangible quality called charm and was conceived with great breadth of vision, amazing suppleness and unerring architectural instinct.

Unquestionably, Polk's talent had a very great influence on the architecture of California. He was a leader in some of the more far-reaching movements. He always fought for high standards and artistic ideals and applied them with rare skill to his own work. It is therefore a great satisfaction to his admirers and art lovers to feel that his work has been so skillfully and faithfully carried on by his successors, Messrs. Mitchell and Moore.

MORE ARCHITECTS FOR CALIFORNIA

There seems to be an influx of Middle West architects to California. Whether this is due to an impression that the Pacific Coast is enjoying unusual prosperity, or whether the newcomers have been lured by our attractive climate, are questions that only the newcomers themselves can answer. The following items from a recent number of the Improvement Bulletin, published in Minneapolis, are indicative of the Westward trend:

Des Moines Architect Will Locate in California—Herbert Moore, member of the firm of Boyd & Moore, architects, Insurance Exchange building, Des Moines, will leave Des Moines soon to establish an office in California.

Architect Will Locate in California—The Holtzman-Hartupee Company, architects and engineers, 501 Commonwealth building, Des Moines, is succeeded by Hartupee & Co. Mr. Holtzman expects to locate in California.

"UMBRELLA" ARCHITECTURE

New York's increasingly difficult problem of where to put all its inhabitants, receives the attention of a passing London architect, who announces that "a top-heavy skyscraper, springing like an umbrella-pine from its slender stalk, may be the typical New York building of the future." The metropolis, which has to go up since it cannot expand horizontally, is

now turning toward pyramidal effects in its huge buildings, with a series of terraces leading up to the summit. But these will not give room enough, believes our English visitor, the London correspondent of the Journal of the American Institute of Architects, who speculates that:

"One can visualize the future building, with its walls perhaps of huge slabs suspended from each floor, containing every imaginable supply and equipment. Perhaps the future skyscraper will bulge at its summit and spring like an umbrella-pine from a slender stalk. Perhaps New York will some day look like a city that is upside down."

Leaving the future, the London architect criticizes many of New York's present buildings on the ground of "standardization" and "a certain sameness." Many American architects, he says, seem to have been too busy to consider the design of their own details, and so are "obliged to fall back on the draftsman and the book."

ARCHITECT OF SESQUI-CENTENNIAL

Writing of the Sesqui-Centennial buildings in the November Architect and Engineer, credit is given Messrs. Cret and Kelsey of Philadelphia for having designed some of this work. The information came from an official of the government in Washington who, apparently, was misinformed. Letters were addressed to Mr. Cret and City Architect John Molitor of Philadelphia and the following replies would seem to place the credit where credit belongs:

Editor The Architect and Engineer,
San Francisco, Calif.
Dear Sir:

Replying to your letter of November 16, 1926, addressed to the Honorable W. Freeland Kendrick, Mayor of Philadelphia, who has forwarded same to me for reply.

I wish to state that I was appointed by the Sesqui-Centennial Exhibition Association as supervising architect and also requested by them to make a general plan locating the principal buildings and the design of the main exhibition buildings, and as far as possible control the design of the other buildings erected by foreign countries and the different states. Other architects designed several foreign and state buildings and, of course, the buildings in the Gladway were designed by the architect selected by each concessionaire. . . .

If you desire any further information, or would care to use any photographs of the different buildings, I would be pleased to furnish you with some copies which have not been published heretofore. I am, yours very truly,

JOHN MOLITOR,
City Architect.

Editor The Architect and Engineer,
San Francisco, Calif.
Dear Mr. Jones:

The guide of your party at the Pan-American building was not well informed in regard to the Sesqui-Centennial.

It is true that I was for a while appointed as head of the Architectural Department of the Exposition. That was before the present location of the Sesqui Centennial was decided upon. I had absolutely nothing to do with the Exposition as it now is.

As to the Pan-American, you know, of course, that this work was done by me in association with Albert Kelsey. Very truly yours,

PAUL P. CRET.

When Past Becomes Present

Editor The Architect and Engineer,
San Francisco, Calif.

Dear Sir: It flatters my excessive vanity to read the lines of Hubert G. Ripley in your October issue. It is of special interest to consider the vivid clearness with which memory serves to recall events of thirty years ago; the work, play, fellowship and all else which constitutes an integral part of that long ago. Ripley's references panoramically revive incidents in minutest detail supposedly forgettable; even the cracks in my drawing table and the exact place where the ink was spilt and the oilcloth band in the office boy's new straw hat. I have often wondered what has become of Gus, the office boy!

When memory is permitted to exercise its prerogative, then past becomes present; even taking precedence to that which is! Memory, the poor dear thing, gets but little chance to exercise its prerogative with me; the today and the tomorrow are too blessedly interesting to leave time for much reflecting over yesterday. I thank you for the courtesy which your quotation from Ripley's lines implies to myself.

LOUIS C. MULLGARDT.

With the Architects

Building Reports and Personal Mention

Turn Light on Specifications

Anent the publication of architect's specifications, a Los Angeles architect writes as follows:

"Very much interested in your idea of publishing specifications turned out by various architectural firms, inasmuch as this is somewhat of an ambitious idea. Those architects that turn out specifications, which you speak of as being a disgrace, generally are well aware of the fact and would hesitate to have them appear in print. On the other hand, those offices who are somewhat proud of the fact that their specifications are creditable instruments of service, are usually somewhat jealous of the fact, as it has taken a number of years to put their specifications in such form, and has naturally cost them a great deal of money and effort.

"I am speaking purely in a general sense in making these comments, and do not want you to feel that this is our attitude, as I believe that at the present writing at least we would be glad to cooperate with you in an effort of this sort."

Warning to Non-Certificated Architects

The following information is supplied by the California State Board of Architecture, Northern Division:

"The case of People vs. Davis, Alameda County:

"The defendant in the above entitled case was found guilty of practicing as an architect without a license, and upon October 26th, of this year, sentence was imposed in Judge Tyrrell's court. Defendant was ordered to pay a fine of $50 or spend 25 days in the city prison."

Note—This is the first conviction that has been announced by the State Board for a long time.

Competition Winner

H. Roy Kelley of Pasadena, who won the first prize in the small house competition conducted by the Own Your Own Home magazine, has also been awarded first prizes in two competitions conducted by the Biscayne Boulevard Association of Miami, Fla., for the best design for an automobile filling station and for the best design for street traffic signal tower, traffic signal standards and street electroliers, including street signs. Mr. Kelley is a graduate of Cornell University and is a member of the Los Angeles Architectural Club.

Seven-Story Apartment

Architect W. L. Schmolle, 519 California street, has completed plans for a seven-story Class B apartment house to be built on Jackson street, near Buchanan, San Francisco, for William L. Penziner at an estimated cost of $200,000. The structure will be high-class in every particular, and the twenty-eight apartments will be divided each into three and five rooms.

Sacramento Church

Working drawings will be completed January 1st, at which time bids will be taken by Architects Dean and Dean of Sacramento, for a $250,000 church for the Westminister Presbyterian Society. The same architects have recently been commissioned to prepare plans for the new Elks' Club building at Marysville to replace the structure destroyed by fire.

New Schools

Architects George C. Sellon and Company of Sacramento have been commissioned to prepare plans for a group of high school buildings at College, Colusa county, for the Pearce Union High School District, structures to cost 200,000. The same architects are also preparing plans for a high school building at Gridley to cost $125,000.

Pasadena Church

The First Congregational Church of Pasadena will spend $350,000 in the erection of a new edifice at Los Robles avenue and Walnut street from plans by Architects Leon C. Brockway and H. M. Patterson, associated.

Brick Apartment House

Architect O. R. Thayer, 110 Sutter street, San Francisco, is completing plans for a three-story frame and brick veneer apartment house which his client will build on Buchanan street, near Washington, at an estimated cost of $40,000.

San Jose Elks' Club

Some extensive remodeling to the San Jose Elks' building is to be done during the coming year. A preliminary survey is now being made by Architect Frederick H. Meyer of San Francisco, who estimates the improvements will cost $200,000.

Steel to Be Welded

The new process of welding structural steel in place of riveting, is about to be adopted by Villadsen Brothers, contractors for a building which the Associated Oil Company is to erect at 59th and Green streets, Emeryville, California. This structure is to cover ground area 300x300 feet and is to be used as an auto shop for the Associated Oil Company's trucks. There will be approximately fifty-five 60-foot span steel trusses, all of which will be electrically welded. Plastik Watertite Old Mission Portland cement is to be used and Fenestra steel sash has been specified. The building will cost approximately $110,000 and will be one of the largest of its kind on the Pacific Coast.

Sunset View Mausoleum

Architect Wallace H. Hubbert, French Bank building, San Francisco, is completing working drawings for the first unit of a $1,000,000 mausoleum to be built in Sunset View Cemetery, El Cerrito, Contra Costa county. This unit will cost $300,000 and will cover a ground area of 215x210 feet. The structure will contain three thousand crypts.

Firestone Tire Depot

George Wagner, Inc., 181 South Park, San Francisco, has been given the contract to construct a two-story Class C reinforced concrete automobile tire service station at 12th and Mission streets, San Francisco, for the Firestone Company. The building will cost $50,000. Mr. Wagner has also been awarded the contract to build a group of factory structures in Emeryville for the Sherwin-Williams Paint Company.

Twenty-Story Hotel

Construction is announced to start in March on a twenty-story Class A hotel on the site of the present Capitol Theatre at 50 Ellis street, San Francisco. The plans for this 430-room hostelry are being prepared by Architect Edward Mussen Sharpe. The owners are the Equitable Realty Company and L. B. Ham, and the estimated cost of the project is $1,500,000.

Architect Appointment

Edward H. Bennett of Chicago, who at one time made a survey for San Francisco's Civic Center, has been appointed to the position of consulting architect for the federal government in the matter of the $50,000,000 building program at the national capital. Mr. Bennett has been acting in this capacity in the building programs of Portland, Chicago, Buffalo and St. Paul.

POSITIONS AND HELP WANTED

The Architect and Engineer will insert free of charge, items similar to those found below, for the benefit of architects who are in need of draftsmen or draftsmen who are in need of a position. Give experience, qualifications and salary expected.

POSITION WANTED — A recognized Eastern designer would like permanent connection on or near the Pacific Coast. If you now have, or soon expect to have a vacancy, please permit me to present my qualifications. Address Box Y, Architect and Engineer.

ARCHITECT — Certified, middle-aged, broad technical and practical experience in California, desires to manage office, write specifications or to take charge of drafting room of a busy firm who will consider association after a satisfactory try-out. At leisure after the first of the year. Box X, Architect and Engineer.

DESIGNER WANTED — Sacramento architect wants all-round draftsman. Must be able to design and take charge of drafting room in absence of chief draftsman. Good salary and permanent job for right man. Address Box X, Architect and Engineer.

DRAFTSMAN — All-round architectural draftsman of three years' experience (8 months in one office), desires position in San Francisco or East Bay office. Salary $200 per month. Box E., Architect and Engineer.

DRAFTSMAN — Of 28 years' experience, wants position in architect's office in Oakland. Box F, Architect and Engineer.

ARCHITECTURAL DRAFTSMAN — Wants position in Northern California. Eight years' experience. Walter W. Miller, care Berkeley Y. M. C. A. Phone Berkeley 6710.

HAS POSITION but wishes to better himself. Young man with four years' experience on working drawings and tracings, now employed, wishes to better himself. Address Box G, Architect and Engineer.

WOMAN DESIGNER on residence work wishes position. Has had five years' experience. Last employed in Palo Alto. Box H, Architect and Engineer.

PARTNERSHIP — Architect, Twenty years experience New York, foreign countries and twelve months in San Francisco, desires partnership or working arrangement with architect or structural engineer, anywhere in California. Experience includes over six years in engineering and construction work. Box L, Architect and Engineer.

STRUCTURAL DESIGNER — Wants position anywhere in California or on the Coast. Five years' experience. References, Moore Dry Dock Co., Oakland, or J. G. Little, C. E., San Francisco. Address Box K, Architect and Engineer.

ARCHITECTURAL DRAFTSMAN — Position wanted. First-class; 10 years' local experience. Pacific 8861 — Douglas 6353.

Dental Office Building

Architects Dedrick and Bobbe of Long Beach have completed plans for a $450,000 eight-story Class A office building at 8th and Pine avenues, Long Beach.

PUBLIC LIBRARY

Southern California Chapter, A. I. A.

At the November meeting of Southern California Chapter, A. I. A., the present officers were again placed in nomination for relection as follows: President, David J. Witmer; vice-president, C. E. Noerenberg; secretary, Edgar H. Cline; treasurer, W. L. Risey, and director for three years, Sumner M. Spaulding.

A resolution, ratifying the revised constitution of the Construction Industries Council, was adopted and a motion was passed authorizing the president to sign the constitution. President Witmer announced that an architectural exhibition was to be held at Museum of History, Art and Science in January. H. C. Chambers is chairman of the exhibition committee. A resolution of condolence in the death of T. Beverley Keim, Jr., a member of the Chapter, was adopted.

The committee on ethics and practice recommended that paragraphs 12 and 13 of standard short form building contract be revised to provide that the owner shall assume all liability for damage by fire, earthquake or other act of God from which the contractor cannot reasonably protect the work, and shall carry fire and earthquake insurance up to 70 per cent of the value of work done or materials furnished during the progress of construction. The recommendation was adopted and the executive committee will prepare a draft of the exact wording to be incorporated in the contract forms.

Hawaii Chapter, A. I. A.

At the November meeting of San Francisco Chapter, A. I. A., the secretary reported the granting of a charter by the board of directors of the American Institute to the Hawaii Chapter and the transfer of certain members of the San Francisco Chapter to the new organization. The name of the San Francisco Chapter is to be changed to the Northern California.

Luncheon Speaker

Charles Henry Cheney, city planner, was the speaker at the weekly luncheon of the Architects' League of Hollywood, held at the Hollywood Athletic Club November 17. Members of the league are being urged to prepare their exhibits for the architectural exhibition to be held next February.

Architects' League

At a meeting of the Architects' League of Hollywood, November 30th, the matter of how the architect could best serve the public was discussed in open meeting. There was a large and enthusiastic meeting and many suggestions of a highly constructive nature were brought out.

Personal

The office of John Galen Howard and Associates in the First National Bank building, San Francisco, has been closed. Mr. Howard's home is at 1017 Vallejo street.

Architect Peter L. Sala has moved to 2130 North Commerce street, Stockton.

Architect Lawrence K. Cone has moved to 658 South Chicago street, Los Angeles.

Architect Orville L. Clark has opened an office in the Chapman building, 756 South Broadway, Los Angeles.

Architect Robert Finklehor is now located at 200 North Oakhurst drive, Beverley Hills.

Architects Train & Williams, Los Angeles, announce the dissolution of partnership by mutual consent. The offices and practice will be continued at suite 227-228, Western Mutual Life building, by R. F. Train with Charles F. Cressey as a partner under the firm name of Train & Cressey.

C. L. Weeks, quantity surveyor, was the speaker at the weekly luncheon of the Architects' League of Hollywood November 24. His subject was "Quantity Surveying and the Architect."

Architect A. M. Edelman of Los Angeles has been reappointed a member of the California State Board of Architecture, Southern District, by Governor Richardson.

Architect Everett H. Merrill and John C. Rahn, engineers, announce the consolidation of their interests under the firm name of Merrill & Rahn, architects, engineers and contractors, and have moved their offices from 4475 Santa Monica boulevard to suite 617 Financial Center building, Los Angeles.

Architects Masten and Hurd announce the removal of their office from 278 Post street to the Shreve building, San Francisco.

Mark T. Cantell, 6406½ Sunset boulevard, Hollywood, has recently been granted a certificate to practice architecture by the State Examining Board, Southern District.

Berkeley Apartment House

Architects Tuttle & Slocombe of Oakland have completed drawings for a three-story frame apartment house at 2200 Chapel street, Berkeley, for Martin E. Marks of the Hotel St. Marks. There will be twenty-four two- and three-room apartments.

Los Angeles Club Building

The Ebell Club will spend $400,000 on a new club building at 4400 Wilshire boulevard, Los Angeles, designed by Architects Hunt & Burns, Laughlin building, Los Angeles.

John Galen Howard Ends Twenty-five Years Service to State

JOHN GALEN HOWARD, director of the School of Architecture at the University of California, has submitted his resignation to the Board of Regents, effective June 30, 1927. The resignation was accepted with many expressions of regret and with encomiums for his services to the institution and the State. Professor Howard has been connected with the University for twenty-five years, and in that time designed most of the new buildings erected under the Phoebe Apperson Hearst plan.

Mr. Howard's work has attracted attention throughout the world, and his reputation has been international. He was on the preliminary advisory board of architects that drew up the plans for the Panama-Pacific International Exposition held in San Francisco in 1915, and was a member of the consulting board that designed the Civic Center of San Francisco.

Among the buildings designed at the university are the Sather tower or Campanile, the Memorial Mining building, Greek Theatre, Boalt Hall of Law, California Hall and Wheeler Hall.

In his letter of resignation Professor Howard said that he was leaving because of a need for rest and a desire to spend the next few years in travel in Europe.

Construction of the first unit of the new building program for the Southern branch of the University in Los Angeles at Westbrook Park was decided upon by the regents at their last meeting. The unit is to consist of a library building and a combined auditorium and classroom building. Messrs. Allison and Allison of Los Angeles and George W. Kelham of San Francisco will prepare the plans.

New Members State Board

Architect James W. Plachek of Berkeley has been appointed to the State Board of Architecture, Northern Division, by Governor Richardson.

Mr. Plachek succeeds J. B. Miller of Miller & Pflueger, whose term had expired. The new appointee is well known in the East Bay section, having designed a number of prominent buildings, including the First National Bank addition, the Federal Land Bank, the Ennors building, several schools, fire houses and branch public libraries, and the Richmond hotel. Mr. Plachek was at one time president of the Berkeley Chamber of Commerce and a member of the City Planning Commission. He is a graduate of the University of Illinois and has lived in Berkeley since 1906.

Governor Richardson also appointed on the board James S. Dean of Sacramento to succeed Edward Glass, who resigned some time ago. Mr. Dean is a member of the firm of Dean & Dean, whose fine work in and around Sacramento is well known to the profession. Among the structures designed by Dean & Dean are the new Municipal Auditorium, several schools, churches, college buildings and numerous residences.

Dumbarton Bridge Ready

Two million dollar Dumbarton highway bridge over San Francisco bay opposite Menlo Park, San Mateo county, will be opened to traffic very soon, according to John G. Sutton, general manager of the Dumbarton Highway Bridge Corporation. The total length of the bridge is 6305 feet. Of this length 226 feet consists of a steel span over deep water, the balance being concrete trestle. The width is 24 feet over the entire length.

Fresno School Work

Contracts totaling $174,168 for construction of the Edison Technical School at Fresno have been awarded by the Board of Education. All work will be done by union labor. This will avoid any labor difficulties during the erection of the structure, in the opinion of the school officials. The Edison school is the first unit of a $1,800,000 expenditure for school construction in the Raisin City.

$1,800,000 Hotel Addition

Plans for a $1,800,000 addition to the Hotel Virginia at Long Beach have been announced by the Seaside Investment Company. Construction will start in about three months, when plans and specifications are completed by Architect John C. Austin. Approximately 600 rooms will be added to the hotel, which now has 300.

School Architects Named

The San Bernardino Board of Education has appointed several architects to prepare plans for new school buildings. Architects Witmer & Watson have been nominated to design the grammar school which will cost $75,000, and Dewitt Mitcham and Eugene M. Martion, San Bernardino architects, have been nominated to design the junior high school.

Granted Certificates

At the meeting of the State Board of Architecture, November 30, 1926, the following were granted certificates to practice architecture in this state: Carl Frederic Gromme, 540 Powell street, San Francisco; William E. Coffman, 871 42nd street, Sacramento.

Spanish Architecture Ideal for the California Home*

By MARY PICKFORD FAIRBANKS

IT IS rather daring for me to come before the American Institute of Architects and offer suggestions for improvements to those who have spent their lives in study and application of just the things I am going to talk about, but I feel confident that you will accept what I have to say in the spirit in which it is meant. Undoubtedly you have considered very thoroughly the points that I am about to set before you, but in the urgent rush of business, and the consideration of the more practical side of things, they have, perhaps, remained unrealized dreams.

Tree planting does not directly concern the architect except as an embellishment of his work. It is enough to say there is a great deal of room for improvement along the boulevards and even in the gardens. In my estimation it is such a mistake to cover a beautiful house with vines. They keep away the sun, darken the interior, bring dampness and bugs, are very bad for exterior finish, and, to me, are far from beautiful. I think a much better effect can be obtained by fresh paint or stucco with low growing shrubs, beautiful lawns and a few shade trees.

The trees of old world Europe contribute almost as much as the architecture to the individuality of the cities. When one thinks of Paris, the Champs Elysees and the Bois come first to mind.

In competing with the show places of the world for tourist trade we should realize that it is of the utmost importance to develop our resources and advantages in every way possible, and if we all unite in a concentrated effort to aid the Park Commission and the Tree Planting Commission, much can be accomplished.

Not so long ago I asked a famous editor who was visiting us his impressions of Los Angeles and the residential section. He said he thought it was a crime to build beautiful homes on 50 and 100 foot lots. I am inclined to agree with him. Of course, I appreciate the fact that this is a matter which is largely controlled by the subdivider and that, naturally, the main thought in his mind is to make as much profit per square foot as is reasonably possible, but, after all, is this not a short-sighted viewpoint? Would not greater attractiveness result in greater value? In the new residential districts which are constantly opening up it is to be hoped that there will be more stringent restrictions which will require all homes above, say $50,000, to be on lots of 200 ft. frontage or more. In my estimation Pasadena has a dignity and beauty that is lacking in nearly all the new subdivisions.

I believe it is the law in Spain that everyone whitewash his house every other year. It gives a feeling of brightness, charm and cheer to the Spanish landscape which is sadly lacking in the majority of our American cities. Even in Los Angeles in the older section the lack of paint is very noticeable. I believe that those who can afford it should be forced by law to keep the outsides of their houses painted and in repair and there should be a fund established for those who are unable to do so.

Someone of a critical turn of mind might ask why picture studios, and our own in particular, are not more attractive, and why they are generally considered a detriment to the neighborhood. It must be borne in mind that the studios are only temporary propositions, and, therefore, it is impractical to put up large, permanent buildings. But with tree planting and painting a very attractive result can be obtained and such plans are now in formation for our particular studio. I am not upholding the views of fellow producers, and I, personally, think there is a great deal of room for improvement in the exterior of the studios.

I know from personal experience that architects favor Spanish and Italian architecture for California, but they are not always able to convince their clients of its desirability; and that English and early Colonial, with red bricks and heavy pillars, have no place in Southern California. Of course a man building his house has every right to build the kind that is most convenient and most pleasing to him, but it seems too bad that he is permitted to carry out his ideas of English and Colonial houses to the detriment of a whole block where his neighbors have erected houses of Spanish and Italian architecture. The English house in itself may be very beautiful, but it will stand out in bold and glaring contrast to its neighbors. If it were possible in every subdivision to set aside a section for a certain type of architecture, Colonial, English, Swiss, French, etc., how much more attractive it would be than the medley we now have. Of course, I feel we should retain as much as possible the Spanish, or I should say Mexican or early Californian feeling. Failing this, Italian is the next best thing. I have long felt that the Spanish influence in California is one of the greatest

* Extracts from a talk before the Southern California Chapter, A. I. A., November 15.

charms our state possesses, a precious heritage second only to our climate, and that it should be preserved in every way possible.

Would it not be a shock to find a Mexican hacienda in New England? But no more so, to my way of thinking, than to see the Colonial here. There are many people with this same idea in mind, as witness the Santa Fe which has just developed 9000 acres near Del Mar to be known as the Rancho Santa Fe. The restrictions are most stringent and only Spanish architecture is permitted in even the smallest building. Mr. Fairbanks and I have bought a large tract of land there and are planning to build an early California hacienda. We had looked everywhere for property and really did not wish to go so far away, but the restrictions were the deciding factor—the fact that we were protected and that the whole development would be in keeping with our own plans. I look forward to Rancho Santa Fe in the next ten years becoming one of the show places of California.

Santa Barbara is another commendable example of the return to the Spanish atmosphere, and it seems that the earthquake was a blessing in disguise if they can carry through their plans to make their main street a perfect example of early California.

A friend of ours built a new house and I suggested to him that he employ the services of an interior decorator, not to dictate to him, but to guide and advise him. He said no, that he liked his own bad taste. I replied that, unfortunately, our bad taste of today is not always our bad taste of tomorrow and that it is a very expensive indulgence. When the home was completed it was a riot of every wild color imaginable and every period in the world's history was represented in the furniture, but in the years that have followed I have noticed that one by one the wild colors have disappeared and that the furniture is now confining itself to not more than three periods. But, unfortunately, bad taste in architecture cannot be so easily rectified. One can change one's drawing room furniture as one can a last year's gown, but when a house no longer pleases it is usually sold, and while the owner goes forth to fresh conquests it remains an eyesore to its poor unfortunate neighbors. If we make a poor picture we have the privilege of shelving it, but your buildings endure—monuments to either good or bad taste.

But perhaps even more than our homes our public buildings need attention. It seems a pity in a city that is outpacing in its growth and development all other cities in the United States that Los Angeles cannot be made to realize that even utilitarian things may be beautiful, a useful thing does not necessarily have to be ugly, but how many people will believe it? I shall cite one example to prove my point—the Hollywood storage warehouse on Highland, near Santa Monica boulevard. I have been told this building cost $100,000 more than the original estimate. I do not know what percentage of the cost this is, but I am confident that it is worth it to the future of that building in attracting business and increasing its property value and that of the surrounding territory. I think the architect and owner are to be praised for their vision and their courage in carrying out their ideals establishing such a splendid example to the community.

Intelligent planning and foresight made Washington the most beautiful American city. Our city is still young enough to more-or-less follow its splendid example.

I hope you will understand that all I have said has been in the spirit of helpful co-operation. Please do not think I do not appreciate all the architect has done and also how much more he would like to do. I know the fight he wages against economic conditions and how often he has to bow to the whims of capricious clients. I know how bitter it must be to him to plan an ideal building, only to have his client insist upon a door here, a window there, an added wing and a thousand other changes so that when it is finished he hardly knows his own creation and his beautiful swan has become an ugly duckling. I can only commend him for all he has accomplished against many odds. And again I want to say he has a great responsibility and duty to the people, for after all he is the custodian of the public taste.

To Design Fresno Schools

Architects Felchlin, Shaw and Franklin, Fresno, have been commissioned by the Board of Education of that city to prepare plans for the Edison Technical, Longfellow and Washington Junior High School gymnasium buildings, scheduled for the 1928-29 program under the $1,800,000 bond issue already authorized.

Architects Kump and Johnson, Rowell building, will prepare plans for the proposed John Borroughs School. Estimated cost, $80,000.

Church and College

Architects Allison & Allison, 1005 Hibernian building, Los Angeles, are completing plans for the new Sunday school building at Claremont for the Claremont Community Church. The cost is estimated at $150,000. The same architects will design one of the new buildings for the University of California, Southern Branch.

Tentative Draft of Model Lien Law Issued

THE Standard State Mechanics' Lien Act Committee appointed by Secretary Hoover has made public its tentative draft of a uniform mechanics' lien law.

This draft has been submitted to a large number of trade associations, professional bodies and individuals as a means of securing comment and suggestions. The Associated General Contractors of America, represented on the committee and vitally interested in the proposed law, will file a brief with the committee, setting forth the organized views of members of the contractors' national association.

Dan H. Wheeler, secretary to the committee, has asked that all comments be forwarded to reach him before January 31, 1927.

The official statement made by the committee at the time the tentative draft was promulgated reads, in part, as follows:

"The tentative draft contains few new departures, practically all of its provisions having been found workable in several jurisdictions. The aim of the committee has been to produce an act which will adequately protect the interests of the worker and others concerned in construction as well as the interests of the owner and those who finance building operations, and to distribute as equitably as possible among the groups the burden of securing such protection.

"The tentative draft of the act is being distributed to individuals and to trade and professional bodies who will study it in detail and submit to the committee their comments and suggestions. The committee has requested that all comments be forwarded to its secretary before January 31, 1927. They will then be collated and carefully studied by the committee with a view to perfecting the act.

"The committee believes that a wide and thorough study will aid in producing an act which will be fair and just to all and which can be recommended to each state legislature for consideration.

"The committee also believes that uniformity in this field would eliminate much confusion and expense which those doing business in more than one state experience on account of the wide divergencies in the present laws."

Going Back East

It is announced that Architects Schultz and Weaver are closing their Los Angeles office and will in the future operate their business from their New York office.

Engineers' Club

At the last meeting of the Committee of the Joint Technical Society, a tentative organization for an Engineers' Club in Los Angeles was formed. It was recommended that the club should have for its purpose the promotion of the following activities: Social, public relations, engineering employment and joint publication for all technical groups.

The committee appointed J. E. Macdonald as president, pro tem, and W. C. Hogoboom, secretary, pro tem, with instructions to proceed with arrangements for a permanent organization.

Associate Construction Engineer

The United States Civil Service Commission will hold an examination for the position of associate construction engineer in the Supervising Architect's office, Washington, D. C. Applications should be filed not later than December 30. The entrance salary is $3,000 a year. Your nearest postmaster will supply the necessary application blanks.

Theatre and Hotel

Architect William H. Crim, Jr., 425 Kearny street, San Francisco, is completing working drawings for a three-story Class A theatre and hotel which the Crim estate will build on Mission street, between 19th and 20th streets, San Francisco. G. A. Lansburgh will act as consulting architect of the theatre.

Colonial Country House

Plans have been completed by Architect N. W. Mohr of San Francisco for a $35,000 Colonial type country house to be built near Palo Alto for Frank Gorman. Besides the main house there will be a chauffeur's quarters, garage, pumping plant and water system. The same architect has also made plans for two bungalows in San Mateo for D. R. Campbell.

Newspaper Building

Plans are being completed by James A. Hjul of San Francisco for a two-story and basement Class B reinforced concrete newspaper building at Howard and Russ streets, San Francisco, for the Daily News.

Addition to Children's Hospital

Architects Bakewell and Brown have been commissioned to prepare plans for additions to the San Francisco Children's Hospital, estimated to cost $400,000.

More Criticism of "Shirt-Front" Architecture

(Editorial in Stone)

While architecture comes in for a good deal of criticism, much of it being an airing of personal likes and dislikes, there is one suggestion that meets with almost universal approval, both public and from the profession, as such. This is the campaign being carried on by various civic organizations looking to the elimination of what one publication is pleased to call "shirt-front" buildings, that is, structures of which only the street elevation or facade is given a finished appearance, the sides and rear being encased in common brick with no semblance of unification with the front. Of course, architects are not to be blamed for their part in this disregard of artistic requirements, but rather the victims of their client's parsimony. Fortunately zoning and building regulations that have brought in the set-back or tower-like development in sky-scrapers is having its influence on both design and materials. Structures that tower above their neighbors attract attention from afar and to give them a "shirt-front" on the street elevation would be much like following the example of the small boy who did not wash the backs of his hands for the very good reason that he did not eat with them. Pyramiding is also a means of enclosing unsightly water tanks, of which there is a forest on the skyline of almost every American city. Chimneys can also be concealed with the tapering peaks and another eyesore eliminated. The campaign to do away with these glaring defacements of wall surfaces and skylines has achieved much and in time the mere fact that "it is not being done" will serve to bring about the almost total absence of such buildings.

Married

Miss Frances Voll, daughter of Judge and Mrs. Fred J. Voll, organist and radio artist, was married at Hollister, November 28 to Irving Gardner Smith of New York, architect. The ceremony was performed at the bride's home by Rev. D. B. Titus of Watsonville Christian Church. After a honeymoon tour in Southern California, the couple will make their home in Berkeley.

Christmas Jinks

The San Francisco Architectural Club held its annual Christmas jinks in Eagles hall December 11th. The occasion also marked the twenty-fifth anniversary of the club. The entertainment was unique and replete with surprises. There was a large attendance.

Small Store Architecture

Editor The Architect and Engineer, San Francisco. Dear Sir: I have enjoyed reading The Architect and Engineer in office of Joseph J. Blick, architect, with whom I have been connected for some time. At present I am not maintaining a regular office of my own, but manage to handle the work of Mr. Blick and do considerable of my own as well.

The work I have on hand consists of a department store, 50x158 feet, three stories and basement, costing $84,000; a one-story store building, 80x75 feet, to cost $17,200, and four residences costing various amounts to $12,000.

As a matter of comment, I would be interested in any movement to better the architecture of the small store buildings which are an eye-sore to every town and city in the state. Of course, these small stores are put up cheap to get income from otherwise vacant property, but it seems to me that it should be pointed out to the owner that the slight additional cost necessary to make them attractive is a good investment and helps to raise the general tone of the town or city in which they are erected.

I notice that even among the architects there is very little attempt to get away from the conventional box style front.

Do they feel that the jobs are too small to put forth an effort to really design something worth while? Real talent has been shown in some of the larger stores. Sincerely yours,

WENDELL W. WARREN.

Pasadena, Nov. 9, 1926.

Favors Spanish Architecture

Editor Architect and Engineer,
San Francisco, Calif.
Gentlemen:

This is to acknowledge receipt of one copy October number of The Architect and Engineer, which I regard as remarkably fine. Please enter my subscription for one year beginning October, 1926, for which P. O. money order in the amount of $2.50 is herewith enclosed. I am much interested in the adaptability in South and West of Spanish architecture and trust you will have more issues which will compare favorably with your October issue. I would like to receive a journal that featured Spanish architecture to the exclusion of all other types. Very truly yours, L. B. McCOY.

San Diego County Hotel

A nine-story Class A hotel will be erected at once at La Jolla, San Diego county, California, by E. A. Wyat. The architect is Norman W. Alpaugh, 2404 West Seventh street, Los Angeles.

Architect Least Known and Least Appreciated

(OAKLAND TIMES)

ONE of the most important tasks ahead of the newly organized Alameda County Society of Architects is to place the architect and the true value of his work before the public of this community. At the present time the architect is probably the least known and least appreciated of our professional men.

The architect, to the average man, is only one who with a pencil sketches a picture of a proposed structure and gives the builder a diagram of the size and floor space. The builder is credited with taking this picture and producing a building of brick, concrete or wood, as the case may be.

The average man has about as much knowledge of architecture as he has of the composition of the moon, and for this reason there is altogether too little appreciation of beauty of design and appearance. Stand on any corner and study the conglomerate of every known type of structure that greets the eye.

However, delivering beauty of design and appearance is only one part of the architect's job. In every corner of the world there are special forces of nature that must be combatted by the completed structure. The stress and strain of floods, tornadoes and earthquakes must be taken into consideration. The walls needed to keep out heat and cold in various climes are also the cause of special studies.

The history of earthquakes in Santa Barbara, Japan and other quarters all tell the same story; cheaply constructed buildings were shaken down like a house of cards. Those properly constructed came through with little or no damage.

The Florida tornado tells the same story of the toll taken by the windstorm. Cheap and rapidly constructed buildings suffered; the properly constructed ones came through.

This is not a matter of chance. No statistics are available as to how many of the destroyed homes were erected from "mail-order" plans and how large a percentage of buildings that stood the test were erected from plans and under the supervision of an architect, to stand the strain to which the particular location was subject. It is a safe guess that the figures would be very favorable to the architects.

There is no standard building. The climate and disturbances of nature vary in different localities and each requires a separate treatment.

New Offices

Architects Walker & Eisen will soon occupy their new offices which are being especially fitted up on the 11th floor of the Western Pacific building, Los Angeles. They are designed to facilitate the handling of a large volume of architectural work, and will include reception room, stenographers' room, six private offices for members of the firm and executives of departments, contractors' estimating room, filing room, supply room, five sketching rooms, and a drafting room, 30x160 feet, to accommodate 50 draftsmen. The principal offices are finished in walnut, oak and mahogany, with paneled walls and decorated ceilings.

BOOK REVIEWS

Edited by

CHARLES PETER WEEKS

Practical Structural Design in Timber, Steel and Concrete, by Ernest McCullough. Third Edition, revised and enlarged; 6 x 9 inches; 416 pages; 224 illustrations. Published by Scientific Book Corp., 15 E. 26th street, New York, N. Y. Price $4 postpaid.

In this new edition every chapter has been gone over and brought up to date. The previous editions covered only timber and steel construction but the scope of the new work has been extended to include concrete. More than one hundred pages and many illustrations have been added.

One of the outstanding features of this volume is that no knowledge of algebra or higher mathematics is necessary to understand the explanations, for all calculations are presented in the form of ordinary arithmetic which every builder knows. For the practical man—the man who has not spent years studying higher mathematics—this volume gives a clear working knowledge of every detail of the subject. It is fully modern and free from terms not in everyday use.

The simplicity of the mathematics used, together with the prominence given to graphical methods makes it as useful to the man who occasionally designs a building as to the detailer who has daily need for a reference book.

The book embodies an experience of nearly forty years. It has enabled architects to work independently of engineers. Builders and contractors have made it their handbook.

The problems of building construction are fully tretaed, from the design of the floor joist and small posts to long span trusses and the largest columns.

Cement, Concrete and Bricks, by Alfred H. Searle. Second edition. Illustrated. Published by D. Van Nostrand Company, 8 Warren street, New York. Price $6.

A review of this book will be published in the January number.

A Plea for More Intelligent Building of Growing Cities and Towns

HON. FRANKLIN D. ROOSEVELT, President
American Construction Council

SINCE the organization of the American Construction Council in 1922 by Secretary Hoover and myself upon the urgent request of financial, manufacturing, construction and other representative business interests of the country, the Council has done a splendid service in dealing with the economic problems of the construction industry and their relations to the public.

The past four years have witnessed both in volume and in character of operations an unparalleled period of activity for the construction industry, which has required the utmost effort on the part of the industry itself as well as given untold stimulation to the general business structure of the country. This situation brought with it many new conditions and many new influences. Some of these were good; some of them were not good. In the great onrush of a nation-wide demand for housing and business buildings, highways and other kinds of construction, sought at almost any price and wanted without delay, it was often difficult for the buying public to single out for itself what was good and what was bad, and successfully meet the situation.

As the Council early pointed out in this period of hectic building activity, it was inevitable that enormous loss must result through the putting up of structures of inferior quality and unsound financing. Badly conceived buildings, badly built buildings and badly financed buildings were often the usual rather than the unusual occurrence. This situation resulted, as the Council was also quick to point out at the time, from the activities of irresponsible groups found in every element of the industry and especially on the part of fly-by-night speculators who came into the industry to pluck what they could and unload on the unsuspecting public. As a consequence, the responsible parties in the various elements of the industry, and I wish to say that there is just as large a proportion of responsible persons in the construction industry as are to be found in any other great and complex industry of the nation, had almost insuperable handicaps to overcome in gaining the recognition they deserved for the proper conduct of the industry and the protection of the public.

In this ominous situation the American Construction Council stood pre-eminent in giving voice and leadership to the constructon industry and in awakening the public to the seriousness of the situation, directing its energies toward eradicating the irresponsible and evil elements and to building up confidence in the responsible and the good.

Today we can view the results of that labor, and they are good. I confidently believe that the American Construction Council has saved the country literally millions and millions of dollars in its work on better building alone. No other organization, speaking for a great industry, even with financial resources many times greater than ours have been, has ever done a more effective job of creating an honest and enlightened public opinion on a subject of such immense importance to the nation.

Of course this has not been done by the Council without the co-operation of many others, for the Council has enjoyed the hearty support of representative groups from all the component parts of the industry as well as of federal and state departments interested in these problems. But the task is not yet done, although the return to a more normal consideration of real building values which has been brought about through the Council's efforts and the general catching up in some lines of building activity is now helping to bring the solution nearer.

I wish to call particular attention to the real emergencies that have resulted from the mushroom growth of many of the country's larger cities without definite and constructive planning. We must build cities and towns, but the time has come when we must build them intelligently. To do this, future needs as well as present conditions must be considered. The health and convenience of the public as well as property values and economy of time are suffering from the lack of well directed building programs in many metropolitan areas. This problem is not confined alone to larger centers but affects every town and village, and intelligent planning on their behalf now will prevent in the future for them the unfortunate conditions that are now causing untold waste in our larger cities either through the continuance of bad conditions or the cost of rebuilding. The undirected mushroom growth of our cities and towns must be controlled. Considerable work along these lines is being done in some localities, but the problem as a whole must be broadly and courageously faced.

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Landscape Architects Meet

The annual meeting of the Pacific Coast Chapter of the American Society of Landscape Architects was held a few days ago at La Venta Inn, Palos Verdes, near Los Angeles. Some twenty-four members, wives and friends attended the luncheon meeting which was followed by a business session. Matters relating to this growing profession of Landscape Architecture, methods of practice, charges, etc., were discussed, and the following officers elected for the ensuing year: President, Stephen Child, San Francisco; vice-president, Emile Mische, Los Angeles; secretary, John W. Gregg, University of California, Berkeley; treasurer, J. H. Trout, Los Angeles.

Architects' Banquet

The Alameda County Society of Architects entertained the members of San Francisco Chapter, A. I. A., at a dinner in the Athens Athletic Club, December 20th. The speakers included John Galen Howard, Bernard Maybeck and Walter Matthews. President John J. Donovan presided. The entertainment features were in charge of Messrs. Wastell and Barton.

American Academy Competition

The American Academy in Rome has announced its annual competition for fellowships in architecture, landscape architecture, painting and sculpture. The competitions are open to unmarried men not over 30 years of age who are citizens of the United States. The stipend of each fellowship is $1,250 a year for three years, with additional annual allowances of $50 to $100 for material and model hire, and opportunity for extensive travel. Residence and studio are provided at the Academy free of charge, and the total estimated value of each fellowship is in excess of $2,000 a year.

Under regulations revised this year for the competition in architecture, graduates of accredited schools will be required to have had architectural office experience of six months, instead of a year, and men who are not graduates of such schools may enter the competition if they have had at least four years' architectural office experience and are highly recommended by a Fellow of the American Institute of Architects.

Entries for all competitions will be received until March first. Circulars giving full information may be secured by addressing Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park avenue, New York City.

Five Houses to Cost $110,000

Five Italian type city homes are being designed by Architect F. Eugene Barton, Crocker building, San Francisco. The houses are for W. R. Voorhies, Inc., and will be erected on Jackson street, San Francisco, at a total estimated cost of $110,000. Plans will be finished early in January, when bids will be called for.

New Management

The Truscon Steel Company recently made announcement of the change of management in their San Francisco office, 709 Mission street. Effective November 1st, Messrs. F. H. Maloney and W. H. London became associate managers, succeeding Charles Holloway, Jr., who has become general sales manager for the Golden Gate Atlas Materials Company. The Truscon Steel Company announce that the steel window and reinforcing steel departments, as well as all the other departments of the concern, are in competent hands.

Engineers' Club

The Engineers' Club of Los Angeles has been organized with 157 members. It will be a social organization and clubrooms will be maintained. The matter of suitable quarters will be taken up at once by the board of directors.

Following are the officers of the club: President, Frank Olmsted; first vice-president, John E. Hodge; second vice-president, H. L. Doolittle; secretary-treasurer, R. F. Ware; directors, E. L. Mayberry, Samuel Gates, H. L. Payne, J. E. MacDonald and M. C. Carr.

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San Francisco, Cal.

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Please send me July number of The Architect and Engineer. My copy, just received, has been dropped into a puddle of water and ruined. I have been a subscriber to your very valuable and entertaining magazine since the first number came out, I think, and wish to maintain my file unbroken. You are due my hearty thanks for the pleasure I get every month. Send bill for the extra copy requested and I will remit in postage stamps.

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Professional Charges Investigated

Inferences having been made through various sources of public information, that excessive fees have been charged and received by the firm of Bebb & Gould of Seattle, Wash., for architectural services in connection with the first unit of the new Library building at the University of Washington. The Washington State Chapter of the American Institute of Architects, through its Executive Committee, felt obligated on behalf of the Chapter to investigate these charges, and the report of the committee will be published in an early issue of The Architect and Engineer.

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Enclosed find check in the sum of three and one-half ($3.50) dollars for two years' subscription to your valuable magazine. I had instructed my secretary, some months ago, to mail this to you. She is out of the city now, but suppose she forgot to do it.

Your magazine is one of the most valued publications coming to this office. We find the blue estimate sheets, in the back of each issue, especially helpful. I am, with the best wishes, sincerely yours,

J. E. TOURTELLOTTE.

COMPETITIONS

Court House Competition

An architects' competition, with prizes of more than $35,000, for plans for the new $6,000,000 court house at Milwaukee, is announced. First prize will bring the winning architect $20,000, second prize $7,500, third prize $5,000, and fourth prize $3,000. The county reserves the right to refuse the winning plans and accept those of any other architect in the contest.

Granite will be used for the base of the building, and Bedford limestone for the upper portions. The fee to be paid the architect and the exact site of the building have yet to be determined. A. C. Clas, Milwaukee, architectural adviser to the county, is preparing the program for the competition.

Dance Pavilion

Plans have been made by Architect Clarence A. Tantau, Shreve building, San Francisco, for a two-story concrete store building and dance pavilion at Van Ness avenue and Market streets, San Francisco, for B. S. Schlissenger, Mortimer and Herbert Fleishhacker. The engineering work is in charge of T. Ronneberg and the construction work will be carried on by the Dinwiddie Construction Company. The building will cost $175,000.

Residence of J. Arthur Snowden St. Francis Wood, San Francisco

ARCHITECTS Masten and Hurd whose work is extensively portrayed in this number, have designed more than 100 homes in San Francisco and the Bay District and whenever they have had occasion to use Cement Plaster exteriors, they have invariably specified CALIFORNIA STUCCO because they have found that the material readily adapts itself to the architectural treatment. Surfaces of charm and beauty have been made possible by the discriminate use of California Stucco. The home pictured above is a typical example.

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Office Space in San Francisco

In a talk at a recent meeting of the San Francisco Office Building Association, R. W. McElroy, chairman of the renting committee of that Association, assured his hearers that there was no need to get panicky over the rental situation. A recent San Francisco Bulletin summarizes his remarks as follows:

"When all the new buildings in prospect or under construction are open, the vacancy for the city as a whole will range around 12 per cent. This will be mostly in the financial district, however, and the percentage there will be higher, but if every one concerned keeps his wits about him we will pull through and no one will be hurt. There is no need for rate cutting—to do so would be unwise. All buildings will have to carry some vacancy. The new buildings will not rent to 100 per cent at once, nor will the older ones retain their 100 per cent occupancy. An ethical rental campaign on the part of the new buildings will help all—an unethical one upsets the applecart for all—even for those who are most in need of substantial revenues."

Something Different

Keeping pace with the change in architectural demands, the University of California architectural department recently gave it students the subject of "a night-club ballroom" to design. A contest between members of graduate students in architecture in drawing original designs for the ballroom subject, resulted in the awarding of first prize to Robert Riggs, San Francisco student. Second place was given to Elliot Pugh, Oakland graduate student. The ballroom subject was chosen by Professor John Galen Howard, chairman of the architecture department, who believes "that a new school of architecture is growing up, and that modern things like night clubs tend to produce this new type."

Going to Move

The W. S. Ray Manufacturing Company announce that after January 1st their sales and executive offices will be located at 170 Sutter street, San Francisco. The company's present sales rooms in the Rialto building are inadequate, due to the increased volume of business. In the new quarters every type of Ray Oil burning equipment, automatic-domestic, commercial, industrial and marine, will be seen in actual operation.

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Zenitherm Now Marketed in California

Zenitherm, a building material for walls and floors, is now being marketed in California, a San Francisco office having been opened in the Sharon building. Distributing points will be established in all the principal California cities. While not a familiar material to Pacific Coast architects, Zenitherm has been extensively used in the East, and architects of national reputation specify it, among them being Holabird & Roche and Walter Ahlschlager of Chicago, Carrere & Hastings, James Gamble Rogers and Warren & Witmore of New York, and Frank I. Cooper of Boston.

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